A STUDY ON

VATHA VATHTHI KIRICHANAM

Dissertation submitted to

THE TAMILNADU DR. M.G.R MEDICAL UNIVERSITY

Chennai-32

For the partial fulfillment for Awarding the Degree of

DOCTOR OF MEDICINE (SIDDHA)

(Branch I – Pothu Maruthuvam)

P.G. DEPARTMENT OF POTHU MARUTHUVAM

GOVERNMENT SIDDHA MEDICAL COLLEGE

PALAYAMKOTTAI – 627 002.

APRIL - 2013

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THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY

69, Anna Salai, Guindy, Chennai - 32.

DEPARTMENT OF SIDDHA

CERTIFICATE OF PARTICIPATION

This is to certify that Dr. .....J. JAYA SHEEBA.....

has participated as ~~Resource Person~~ / Delegate in the Workshop on

"Research Methodology & Biostatistics" for AYUSH Post Graduates &

Researchers organized by the Dept. of Siddha from 04.07.2011 to 08.07.2011

Dr. N. Kabilan
Prof. & Head

Dr. Sudha Seshayyan
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Dr. Mayil Vahanan Natarajan
Vice-Chancellor

GOVT. SIDDHA MEDICAL COLLEGE,

PALAYAMKOTTAI,

TIRUNELVELI – 627002.

SCREENING COMMITTEE

Candidate Reg No: 32101002

This is to certify that the dissertation topic VATHA VATHTHI KIRICHANAM (BENIGN PROSTATE HYPERPLASIA) and the drug SINDHU VALLADHI have been approved by the screening committee.

S.No	Name	Signature
1.	Prof. Dr. N. CHANDRAMOHAN DOSS, M.D (S) Principal & Chairman	
2.	Prof. Dr. R. THANGAMONEY, M.D (S)	
3.	Dr. A. SUBRAMANIAN, M.D (S)	

(Kindly make sure that the minutes of the meeting duly signed by all the participation are maintained by the college office)

APPLICATION FOR PERMISSION FOR ANIMAL EXPERIMENTS

Application to be submitted to send either to the CPCSEA (Address in Form A) or Institutional Animal Ethics Committee (IAEC).

Part A

1. Name and address of Establishment
   K. M. College of Pharmacy,
   Uthangudi, Melur road,
   Madurai – 625 107

2. Registration number and date of registration
   661/02/c/CPCSEA & 19/07/2002

3. Name, address and registration number of breeder from whom animals acquired (or to be acquired) for experiments mentioned in parts B and C. we are using the inbreed colony animals maintained by the Department Of Pharmacology, K. M. College of Pharmacy, Uthangudi, Madurai.

4. Place where animals are presently kept (or proposed to be kept)
   At animal house under the control of Department of Pharmacology

5. Place where experiment is to be performed.
   At Department of Pharmacology
   K. M. College of Pharmacy,
   Uthangudi, Melur road,
   Madurai – 625 107

6. Date on which experiments is to commence and duration of experiment
   01-05-2012 to 01-11-2012
   Six months

(The appropriate protocol form for the research proposal – Part B in the case of experiments using animals other than non human primates, Part C for the use of non human primates – to be duly filled in, signed and appended to this form)

Signature

I. A. E. C. CHAIRMAN 10/2/12
INSTITUTIONAL ANIMAL ETHICAL COMMITTEE
K. M. COLLEGE OF PHARMACY
Uthangudi, Melur road, Madurai - 625 107.

Name and Designation of
Chief Investigator

Date :10.06.2012
Place : Madurai

* Applicable only for application to be submitted to CPCSEA

ANNEXURE

Investigator declaration

1. I certify that I have determined that the research proposal herein is not unnecessarily duplicate of previously reported research.
2. I certify that all individuals working on this proposal and experimenting on the animals have been trained in animal handling procedures.
3. For procedures listed under item 11, I certify that I have reviewed the pertinent scientific literature and have found no valid alternative to any procedure described herein which may cause less pain or distress.
4. I will obtain approval from the IAEC / CPCSEA before initiating any significant changes in this study.
5. Certified that performance of experiment will be initiated only up on review and approval of scientific intent by appropriate expert body (institutional scientific advisory committee / funding agency / other body (to be named)
6. Institutional biosafety committee (IBC) certification of review and concurrence will be taken (required for studies utilizing DNA agents of human pathogens)
7. I shall maintain all the records as per format (Form D)

Signature

(DR. J. Jaya sheeba)

Name of Investigator

10/6/12

I. A. E. C. CHAIRMAN
INSTITUTIONAL ANIMAL ETHICAL COMMITTEE
K. M. COLLEGE OF PHARMACY
MADURAI-625 107.

(For IAE / CPCSEA usage)

Proposal number	: Dr.J.Jayasheeba/32101002/ MD(S)/Ph.D/KMCP/IAEC/36.
Date first received	: 20.05.2012
Date received after modification (if any)	:NA
Date received after second modification (if any)	:NA
Approval date	:10.06.2012
Expiry date	:01.11.2012
Name of IAEC / CPCSEA chairperson	:Dr.N.Chidambaranathan.

Date:10.06.2012

Signature

10/6/12

CPCSEA NOMINEE
INSTITUTIONAL ANIMAL ETHICS COMMITTEE
K.M. COLLEGE OF PHARMACY
MADURAI-625 107

I. A. E. C. CHAIRMAN
INSTITUTIONAL ANIMAL ETHICAL COMMITTEE
K. M. COLLEGE OF PHARMACY
MADURAI-625 107.

MALAR MICRO DIAGNOSTIC CENTRE

134/59-1, Tiruchendur Road, Palayamkottai - 627002

Phone - Lab : 2583954, Res : 2583955

REPORT OF MICROBIOLOGICAL ANALYSIS OF

SINDHU VALLADHI

S.No	Test Drug	Organism (Culture)	Susceptibility	Test zone size	Control zone size
1.	SINDHU VALLADHI	Escherichia coli	Moderately sensitive	12mm	19mm
2.		Klebsiella	Resistant		
3.		Proteus	Resistant		
4.		Staphylococcus aureus	Resistant		
5.		Streptococcus pneumonia	Moderately sensitive	18mm	23mm
6.		Psudomonas aeruginosa	Sensitive	19mm	21mm

15/12/12

Dr.R.NAPOLEON B.Sc. M.D

CONSULTANT MICROBIOLOGIST.

TIRUNELVELI.

Dear Doctor,

Thank you for your reference. If the result is not correlating with the clinical impression, please inform us to repeat the test with a fresh sample.

ACKNOWLEDGEMENT

It is my pleasure to express my thanks to all who contributed in many ways to the successful completion of this work. At this moment, first of all I honor my **God Almighty** as it was purely **His** grace and strength that enabled me to begin and complete this study successfully.

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Dr. S. Mohan M.D(S) Professor and head of the Department, PG Maruthuvam, Government Siddha Medical College, Palayamkottai deserves my sincere expression of thanks for his valuable guidance to choose this topic. Without his suggestion and his healthy criticism this work would not have been accomplished.

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I would like to extend my special thanks to Professor **Dr. V. Neela Kandan M.B.B.S, MD (Internal Medicine)**, Modern Medicine, Government Siddha Medical College, Palayamkottai for his valuable guidance in modern aspects.

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I expand my special thanks to laboratory staff and technicians of Government Siddha Medical College, Palayamkottai for their valuable support in laboratory investigations done with the patients.

I would be wrong if I don't mention the moral support and the personal touch extended by **my family members**. They are true blessings from **God.**

Besides this, several people have knowingly and unknowingly helped me in the successful completion of this dissertation. I would like to extend my warm thanks to each and every one who ever added value to this study.

INTRODUCTION

The **Siddha Medicine** is one of the ancient medical system known to mankind.

"Siddha medicine" means medicine that is perfect. It is claimed to revitalize and rejuvenate dysfunctional organs that cause the disease and to maintain the ratio of vatham, pittam and kapham.

SIDDHA is a unique system of medicine providing better cure for all chronic ailments like carcinoma, Syphilis, respiratory diseases, infectious diseases, diabetes, dermatological cases, autoimmune disorders.

Benign prostatic hyperplasia is the increase in size of the prostate inside its capsule, which apply pressure on the urethra, leading to the obstruction to urine flow. Benign prostatic hyperplasia is characterized by a slowdown in the urine stream build up of urine in the bladder and a frequent need to urinate. Unlike prostate cancer, BPH is not a life-threatening disease, yet, it affects the quality of life (QOL). Untreated BPH may lead to urinary retention causing damage to kidneys, which may result in renal disease.

According to WHO, more than 50%males in the 50 plus age groups have BPH and the incidence might be as high as 90% at 85 years. worldwide more than 25 million of elderly men suffer from moderate to severe degree BPH. Currently available treatment options for the management of BPH include medications and surgery.

As per Danvanthri vaithiyam, Moothira kirichanam disease is classified as 10 types**.** one such type is Vatha vaththi kirichanam .As per Danvanthri vaithiyam, Vatha vaththi kirichanam is a disease with the symptoms of urinary hesitancy, straining, weak urine stream etc..It has the correlation with **'BENIGN PROSTRATE HYPERPLASIA'** of modern science.

AIM AND OBJECTIVE

AIM :

To study the efficacy of **"SINDHU VALLADHI" (internal)** in the treatment of **Vatha Vaththi Kirichanam** (**BENIGN PROSTATE HYPERPLASIA)** as the above said drug formulations has not undergone any clinical trial so far.

OBJECTIVE :

Primary objective : To evaluate the Siddha drug **SINDHU VALLADHI(Internal)** for the treatment of Vatha Vaththi Kirichanam (**BENIGN PROSTATE HYPERPLASIA)**

Secondary objective: To study the siddha cofactors towards the efficacy of medicine.

ABSTRACT

Benign prostatic hyperplasia (BPH) occurs in about half of men in their 50's and about 90% of men over 85 years of age and affects the quality of life. Currently available treatment options for the management of BPH have various drawbacks, such as low clinical efficacy and associated adverse results. Because of these inadequacy, phytotherapy has been extensively researched and some polyherbal formulations have been proven beneficial in the management of BPH**.** Sindhu Valladhi is a polyherbal formulation recommended for the clinical management of BPH and this study was planned to evaluate clinical efficacy and safety of Sindhu Valladhi in BPH. This study was a prospective, preclinical and phase II randomized clinical trail and was approved by the "Institutional Ethical Committee"

A total of 40 patients who were diagnosed as suffering from BPH and who were willing to give informed consent were included in the study. Patients with acute and chronic prostatitis, prostate carcinoma, neurogenic bladder, bladder carcinoma and patients who were put on those drugs, that were likely to affect bladder function were excluded from the study. Also patients with severe renal, cardiovascular or hepatic disorders, patients indicated for surgery and those patients who were not willing to give informed consent were excluded from the study.

At the initial casual visit, a comprehensive medical history was obtained from all the patients. All the patients underwent a thorough systemic examination . Routine biochemical blood tests and specific tests were done for all the patients. All the patients were investigated by USG.

All the patients were advised to consume 500mg of Sindhu valladhi twice daily, for a period of 1 months. There was a highly significant reduction in the mean IPSS symptom score, in the patients at the end of treatment. There were no significant changes in the hematological and biochemical parameters in the patients. This beneficial clinical efficacy of Sindhu valladhi in BPH might be due to the synergistic action of its ingredients. Therefore, it may be concluded that the use of Sindhu valladhi is clinically effective and safe in the management of BPH.

REVIEW OF LITERATURE

SIDDHA ASPECT

ELUCIDATION ABOUT VATHA VATHTHI KIRICHANAM

According to the literature Dhanvanthri Vaithiyam part II **"VATHA VATHTHI KIRICHANAM"** has been described as:

வாதவத்தி கிரிச்சனம்

" ஓது மூத்திரம் வரும்போ லிருக்குமோர் துளிவராது
மீதொரு துளி தான் வீழில் மிகுந்த வேதனையுண்டாகும்
வாதை கீழ்வயிறு நீர்வாய் வருத்தங் கண்டிங்குங் கண்டா
யீதுதான் வாதவத்தி கிரிச்சன மென்பர் முன்னோர்."

பாடல் எண்:10

தன்வந்திரி வைத்தியம்-பாகம் - 2

The above quote states that there may be urge to urinate, difficulty in passing urine,dribbling ,straining which causes severe pain in the areas such as urethra and abdomen.

"ஓதுமூத்திரம் வரும்போ லிருக்குமோர் துளிவராது"

Sensation and fullness of bladder is present but on attempt to micturate/ urinate, not even a single drop of urine is expelled out.

This line indicates urinary hesistancy.

“மீதொரு துளிதான் வீழில் மிகுந்த வேதனையுண்டாகும்”

Even when a single drop of urine is expelled on straining, it will cause severe pain.

“வாதை கீழ்வயிறு நீர்வாய் வருத்தங் கண்டிங்குங் கண்டா”

Pain present over the lower abdomen and urethral orifice.

The poem clearly depicts the following symptoms.

- Urinary hesistancy
- Retention of urine
- Straining during urination
- Pain over lower abdomen and urethra.

In siddha system urinary diseases are classified as,

- Neer Arugal Noi
- Neer Perugal Noi

“நீரிரு வினைக் குணத்தை
நீயறி விரித்துச் சொல்வாம்
நீரினைப் பெருக்கலொன்றே
நீரினையருக்க லொன்றே
நீரிழி வுடனே கொல்லும்
நீர்க்கட்டு வினைகளொன்று”

- **தேரன் கரிசல்**

i) Neer Arugal Noi

The diseases related, when the quantity of urine is suspended for any cause.

ii) Neer Perugal Noi

The diseases related when the quantity of urine is above the normally excreted level due to any cause.

Among these, the "Kiricharam disease" is under the classification of Neer Arugal Noi.

Regarding Moothira Kiricharam the nature of disease, (Ialbu) Noi varum vazhi (Etiology) and Noi Vagaipadu (classifications) have been described in various texts.

1. Theraiyar Karisal
2. Theraiyar venba
3. Madhava Nidhanam
4. Roga nirnaya saram
5. Yugi vaithiya sinthamani
6. Mega Noi,Soothga Noi and Arivaiyar Sinthamani
7. Jeeva Rakshamirtham
8. Sikitcha Rathna theebam
9. Anubava vaidhiya Deva Ragasiyam
10. Pararasa sekaram
11. Saraga Samhitha

But VATHA VATHTHI KIRICHANAM has been explained only in Dhanvanthri Vaithiyam Part II

Synonyms (Veru peyar)

- Neer churuku
- Neer Kaduppu
- Neer Kattu

Definition (Iyalbu)

According to Theraiyar Karisal

"நீரினையருக்கல் என்னும்
நீர்க்கட்டின் குணத்தைக் கேட்டி
நீதமில்லாற் கோச
நீர்ப்புழை நெருப்புப் போலாம்
நீபனா யுதத்தாற்பட்ட
நீல வம்பரமாங்குக்கி…."

Obstruction of the Urethral passage, causing retention of urine or discharge by other unusual ways, urine dribbling out after micturition. There is also frequently sudden stoppage of the stream of urine owing to the contraction of urethra.

According to Theraiyar vagadam

"மூத்திரக் கிரிச்சிக் குணங்கேளீர்
முடுகுந் துளியாய் விழும்
ஆற்றித் தூரம் நடக்கவொட்டா

தறுவை மருந்தா லற்றுவிடும்

தூற்றி விளைவாய் விளைந்திருந்தால்

துடையால் கடுகி விழுமென்று

மாற்றி மறுக்க வகை காண

மனுவோர்க் கெல்லா முரைப்பீரே” - தேரையர் வாடகம்

The disease is characterized by

- Dribbling of urine
- Burning micturition
- Dysuria

According to Pararasa sekaram

“ சிறுநீ ரெரிந்து துளிதுளியாய்ச்

சேரு நிறமு மஞ்சள்காய்

உறுமே சிவட்பாய் வெள்ளையுமாயுவாதி

மிகுந்து கடுத்து நொந்து

பெறுமே யன்றிப் புண்ணாகும்

பின்னு மபானங் கடுத்துளையும்

செறுமே பொருமுங் கீழ் வயிறு

தேகமெலியுங் **கிரிச்சரமே**”

- **பாரராச சேகரம்**

The disease is characterized by

- Voiding small amount of urine
- Dribbling of urine
- Yellow colouration of urine
- Haematuria
- Dysuria
- Burning micturition
- Lower abdominal pain and discomfort

According to anubava Vaidhiya Deva Ragasiyam,

கிரிச்சரம் என்பது வருத்தத்துடன் கொஞ்கம் கொஞ்சமாக மூத்திரத்தை விழச்செய்வது

- **அனுபவவைத்திய தேவரகசியம்.**

Kiricharam refers to dribbling of urine accompanied with pain.

NOI VARUM VAZHI(Etiology)

"அதிக உட்டிணபதார்த்த மசீரண பதார்த்தாலும்
அதிக சம் போகத்தாலு மதுபான மடுக்கலாலும்
அதிகன மானவஸ்து உண்டியிலடுக்கலாலும்
அதிகமூத்திர தன்னிற் **கிரிச்சன மடுக்கமென்ன**."

- **தன்வந்திரி வைத்தியம்**

- Intake of hot and spicy food

- Indigested food
- Alcoholism
- Excess intake of high calorie food.

According to Yugi vaithiya sinthamani

கருதியே மாப்பண்டங் கதித்து உண்ணல்
காலங்கள் மாறியே மிகப்பொ சித்தல்
பருதியே பகல்தனிலே ஸ்திரிசங் சித்தல்
பகல்தனிலே பால்கொள்ளல் பகல் உறங்கல்
நிருதியே நிசிதன்னிற் சயனஞ் செய்தல்
நிந்தையாம் லாகரிகள் நிரம்பவுண்ணல்
வருதியே அக்கினியில் சஞ்சரிப்போர்
மகத்தான **கிரீச்சரத்தில் மருவு வாரே**"

-யூகி வைத்திய சிந்தாமணி

- Intake of carbohydrate rich diet
- Taking food in untime
- Daytime sexual indulgence
- Daytime sleeping
- Intake of excess narcotics
- Exposure to high temperature

According to Mega Noi, Soothaga Noi, and Arivaiyar Sinthamani

“மாறான கிரிச்சனம் தான் நாலதாகும்

வருகின்ற விதமதுதான சொல்ல கேளு

வேறாக மாப்பண்டம் அதிகம் தின்றால்

விரைவாக உற்பனத்தின் செய்கையாலும்

கூறாக காலம் மாறி உண்டால்

கொடு பகலில் சம்போகம் செய்வதாலும்

வேறாக பாதி பகல் தனக்கு மேலே

வெறும் ஆவின் பால் உண்ணும் தன்மையாலும்

தன்மையுடனே பகல் உறங்கும் பேர்க்கும்

தப்பால் கள்ளு மிக குடிக்கும் பேர்க்கும்

மேனமுறவே தீ வெக்கை தினமும் கொண்டால்

முன்பகலின் சூடேக்க வெயிலு காய்ந்து

ஊனமுற சம்போகம் அழுந்திச் செய்தல்

ஊறவாக வேசியேரோடின்பம் கொள்ளல்

ஏனமுற மூத்திர கிரிச்சனம் என்று சொல்லே.”

மேகநோய், சூதகநோய் மற்றும்

ஆரிவையர் சிந்தாமணி

- Intake of carbohydrate rich diet
- Taking food in untime
- Noontime sexual indulgence
- Daytime sleeping
- Intake of excess toddy
- Exposure to high temperature

- Intake of hot and spicy food
- Exposure to forenoon sunlight
- Abnormal sexual activity
- Extramaritual sex affair

According to Jeeva Rakshamirtham

- Taking food in untime
- Sleeping in untime
- Daytime sexual activity
- Exposure to sunlight
- Exposure to high temperature
- Taking narcotics

According to Saraha Samhitha

- Excessive job stress
- Taking very efficacious medicine
- Intake of today
- Fast running
- Taking excess non – vegetarian diet
- Taking undigested food

CLASSIFICATION OF MOOTHIRA KIRICHARAM

In Dhanvanthiri vaidhiyam, Moothira kiricharam is classified into 10 types.

“ அடுத்திடும் வாதபித்த மருக்கபஞ் சந்நிவாதந்
தொடுத்தமூத் திரக்கிரந்தி சுக்கிலக்கிரிசங் காதம்
அடுத்த சக்கரமே வாதகுண்டலி வாதவத்தி
எடுத்திடுங் கிரிச்சத்தின் பெயரிவை யீரைந்தாமே”

- **தன்வந்திரி வைத்தியம்**

1. Vaadha Kirichanam
2. Pitha Kirichanam
3. Kaba Kirichanam
4. Sanni vatha Kirichanam
5. Moothira kirandhi Kirichanam
6. Sukila Kirichanam
7. Moothira kaadha Kirichanam
8. Sakkara Kirichanam
9. Vatha kundali Kirichanam
10. **Vatha vaththi Kirichanam**

In Siddha system various types of Moothira Kiricharam are described in various text books.

I. According to Yogi vaithiya Chindhamani 800

" தெரியவே கிரிச்சரத்தின் செயலைத் தானுஞ்
செப்பவே நாலுவகைச் சீருமாகும்
உரியவே வாத மூத்தி ரக்கி ரிச்சரம்
உகப்பான பித்த மூத்தி ரக்கி ரிச்சாரம்
பரியவே சிலேத்தும் மூத்தி ரக்கி ரிச்சாரம்
பாங்கான மேகமூத்தி ரக்கி ரிச்சாரம்
நரியவே கிரீச்சாரந் தானால தாகும்
நாட்டமாய் உற்பத்தி விலக்கி கேளு"

- **யூகி வைத்திய சிந்தாமணி 800**

1. Vatha Kiricharam
2. Pitha Kiricharam
3. Kaba Kiricharam
4. Mega Kiricharam

II. According to Para Rasa Sekaram

"உற்றே தோன்றுங் கிரிச்சிந்தா நுரைத்தார் நாலு வகையாகச்
சொந்த வாத பித்தகபந் தொந்த மென்பரவைநாலும்"

- **பரராச சேகரம்**

1. Vatha Kiricharam
2. Pitha Kiricharam

3. Kaba Kiricharam
4. Thirithoda Kiricharam
5.

III. According to Mega noi, Soothara noi and Arivaiyar Sindhaman

"சொல்லுவேன் கிரிச்சனம் தான் நாளாதிரகும்
சொந்தமுறும் வாத கிரிச்சனம் தான் ஒன்று
வெல்லும் பித்த கிரிச்சனம் சேர்ப்ப கிரிச்சனம்
வீறான மேகத்தின் கிரிச்சனம் தான்
மெல்லவே இவை நாலு கிரிச்சனங்கள்
மேலான சுத்த முனியோர்கள் சொன்னார்கள்
தெல்லுகில் உள்ளவர்க்கு தெளிவாக
கொடுத்திட்டேன் முன்நூல் முறையை ஆய்ந்தே"

1. Vatha Kiricharam
2. Pitha Kiricharam
3. Kaba Kiricharam
4. Mega Kiricharam

IV. According to Anuboga Vaithiya Deva Ragasiyam

1. Vatha moothira Kiricharam
2. Pitha moorthira Kiricharam
3. Kaba moothira Kiricharam
4. Thiri thoda moothira Kiricharam

V. According to Jeeva Rakshamirdham

1. Vatha Kirichara rogam
2. Pitha Kirichara rogam
3. Kaba Kirichara rogam
4. Thiri thoda Kirichara rogam

VI. According to Sikitcha Rathna Theebam

1. Vatha Kirichara rogam
2. Pitha Kirichara rogam
3. Kaba Kirichara rogam
4. Thiri thoda Kirichara rogam

VII. In Roga nirnaya saram

1. Vatha Kirichara noi
2. Pitha Kirichara noi
3. Kaba Kirichara noi
4. Thiri thoda Kirichara noi

VIII. According to Madhava Nidhanam

1. Vatha Mootira Kiricharam
2. Pitha Moothira Kiricharam
3. Kaba Moothira Kiricharam
4. Sannipatha Moothira Kiricharam
5. Koothaja Moothira Kiricharam
6. Pureeeshaja Moothira Kiricharam

7. Acharisha Moothira Kiricharam
8. Sukkaraja Moothira Kiricharam

XI. According to Saraga sambitha

1. வாத தோடத்தினால் ஏற்படக்கூடியது	- Due to vatham
2. பித்த தோடத்தினால் ஏற்படக்கூடியது	- Due to Pitham
3. கப தோடத்தினால் ஏற்படக்கூடியது	- Due to Kabam
4. மூன்று தோடத்தினால் ஏற்படக்கூடியது	- Due to Mukkutram
5. கல் அடைப்பினால் ஏற்படக்கூடியது	- Due to Calculi
6. மணல் போன்ற உப்புகள் சேருவதால் ஏற்படக்கூடியது	- Due to deposition of salts
7. விந்து கட்டி தடைப்படுவதால் ஏற்படக்கூடியது	-Due to deposition of semen.

MODERN ASPECT

ANATOMY OF PROSTATE GLAND

INTRODUCTION

The prostate is a fibromuscular glandular organ of male reproductive system, which encircles the male urethra, lies below the neck of urinary bladder. Its secretion takes part in the formation of the seminal fluid and corresponds with the paraurethral gland of female.

SITUATION

1. Below the neck of the urinary bladder.
2. 2.5 cm behind the lower part of the symphysis pubis.
3. Above the superior fascia of urogenital diaphragm.
4. Infront of rectal ampulla.
5. Between the two levator ani muscles.

SHAPE

Conical.

CONSISTENCY

Firm (due to presence of fibromuscular stroma in which glandular tissue are embedded).

MEASUREMENT

Length	: 3cm
Breadth	: 4cm
Thickness	: 2cm
Transverse (at the base)	: 4cm
Weight	: 8gm

FEATURES WITH RELATIONS

1. **APEX**
    i. Direction – Downwards
    ii. Rests on the superior fascia of urogenital diaphragm.
2. **BASE**
    i. Direction – Upwards.
    i. Surrounds the neck of the urinary bladder.
    ii. It is pierced by the urethra on its midline of the junction between anterior one-third posterior two-thirds of the gland.
3. **SURFACES**

Anterior Surface

i. The Surface is narrow and convex
ii. Situated 2cm behind symphysis pubis

iii. This surface is separated from the symphysis by the

a) Retropubic fat

b) Deep dorsal vein of penis

c) Prostatic venous plexus

iv. Attachment of puboprostatic ligaments.

v. This surface is pierced by the urethra a little above the apex.

Posterior Surface

i. This surface is broad and flat

ii. Shape is triangular.

iii. The surface is flattened from side to side and convex from above downwards.

iv. This surface is related to the ampulla of rectum separated by the rectovesical fascia.

v. This surface can easily palpated on digital examination through the anus which is 4 cm above the anus on its anterior aspect

vi. It is divided into upper smaller and lower larger part by a horizontal groove.

vii. The upper smaller part forms the median lobe

viii. The lower larger part again divided into two lateral lobes by a median sulcus.

ix. The horizontal groove close to the median plane is pierced on each side by the ejaculatory duct (meeting of the vas deference with duct of the seminal vesicle).

Infero – Lateral Surface

i. Related with the anterior fibres of the leavator ani.

ii. Few fibres of the levator ani are blend with the acts as levator pro prostate.

iii. Anterior recess of the ischiorectal fossa situated outside the levator ani.

LOBES

It has five lobes :

1. Anterior.
2. Posterior.
3. Median or middle.
4. Two lateral lobes.

ANTERIOR LOBE

i. It lies anterior to the urethra.

ii. A small part of the gland called isthmus connecting the two lateral lobes of the gland.

iii. The lobe is fibromuscular there is no glandular fissure.

iv. Adenoma rarely occur.

POSTERIOR LOBE

i. It lies behind the median lobe and the ejaculatory ducts.

ii. It connects the two lateral lobes behind the urethra.

iii. Adenoma never occurs, but primary carcinoma may begin here.

MEDIAN OR MIDDLE LOBE

i. It is bounded:

Anteriorly by the urethra

Posterior and on each side ejaculatory ducts.

Posterior and median plane- prostatic utricle.

ii. It is wedge shaped.

iii. Apex directed downwards towards the colliculus seminalis

iv. It forms the uvula vesicae which is a elevation produced by the median lobe in the lower part of the trigone of the bladder.

v. It contains much glandular tissue

vi. It is the commonest site of adenoma formation.

LATERAL LOBES

i. Lies one on each side of the urethra

ii. It contains glandular tissue.

iii. Adenoma may arise.

STRUCTURES WITHIN THE PROSTATE

1. PROSTATIC URETHRA

i. It runs vertically downwards from the base of the prostate to the slightly infront of apex.

ii. Urethra traverses the gland at the junction of the anterior one-third and posterior two-third.

2. PROSTATIC UTRICLE

i. It is ablind sac directed upwards and backwards.

ii. 6mm in length.

iii. Opens at the middle of the urethral crest.

3. EJACULATORY DUCTS

i. It passes downwards and forwards posterolateral to the median lobe.

ii. It opens at the colliculus seminalis on each side of the prostatic utricle.

COVERINGS OF THE PROSTATE

Inside Outwards

i. True capsule. It is formed by the condensation of the fibrous stroma of the gland.

ii. False capsule/prostatic sheath. It is formed by the visceral layer of pelvic fascia.

Continuation of the false capsule

Anteriorly – with puboprostatic ligaments.

On eachside – Embedded the prostatic venous plexus.

Posteriorly- It is avascular and blends with the rectovesical fascia of Denovillier.

Between the true and false capsule there lies the prostatic venous plexus except at the posterior surfaces.

NERVE SUPPLY

Sympathetic nerve. Superior hypogastric plexus.

Parasympathetic nerve . Pelvic splanchnic nerves derives from S2, S3, S4 Spinal segments.

ARTERY SUPPLY

i. Inferior vesicle

ii. Middle rectal

iii. Internal pudendal.

VENOUS DRAINAGE

i. Veins drains into vesicle plexus finally internal iliac vein.

ii. Paravertebral veins of Batson.

LYMPHATIC DRAINAGE

i. Drians into the internal iliac

ii. External iliac

iii. Sacaral groups.

BENIGN PROSTATIC HYPERPLASIA

"When the hair becomes scanty and grey, when specks of earthy matter begin to be deposited in the tunics of the artery and when a white zone is formed at the margin of the cornea, at this same period the prostate gland usually – I might perhaps say invariably – becomes increased in size", said by Sir Benjamin Brodie.

BPH involves hyperplasia, which is an increase in the number of cells rather than hypertrophy, which is a growth in the size of individual cell. But even the urologists use both these words interchangeably.

Adenomatous prostatic growth is believed to begin at approximately age 30 years. An estimated 50% of men have histologic evidence of BPH by age 50 years and 75% by age 80 years. in 40–50% of these men, BPH becomes clinically significant in 40 - 50% of these men.

BPH involves hyperplasia of prostatic stromal and epithelial cells, which results in the developement of large and fairly discrete nodules in the periurethral region of the prostate. When it is adequately large, the nodules sqeeze the urethral canal and cause partial, or complete barrier of the urethra. This hinders with the normal flow of urine, which leads to the symptoms of frequent urination, tentativeness in urination, risk of urinary tract infections, urinary retention and dysuria – which means painful urination. While prostate specific antigen levels may be higher in these patients because of inflammation due to urinary tract infections and increased organ volume, BPH does not lead to cancer or increase the risk of cancer.

Epidemiology

The prostate gets larger in most men as they get older. The risk of developing BPH for a symptom-free man of 46 years, over the next 30 years is 45%. The prevelance rates increase from 3 cases per 1000 man-years at age 45 to 49 years, to 38 cases per 1000 man - years by the age of 75 to 79 years. Whereas the prevalence rate is 2.7% for men aged 45–49, it increases to 24% by the age of 80 years.

Signs and symptoms

The symptoms or indications of Benign prostatic hyperplasia are storage symptoms or voiding symptoms.

Storage symptoms incorporates

- urinary frequency,
- urgency incontinence
- voiding at night - nocturia.

Voiding symptoms include

- urinary stream hesitancy,
- intermittency,
- dribbling and
- straining to void.

In this case dysuria and pain are not present.

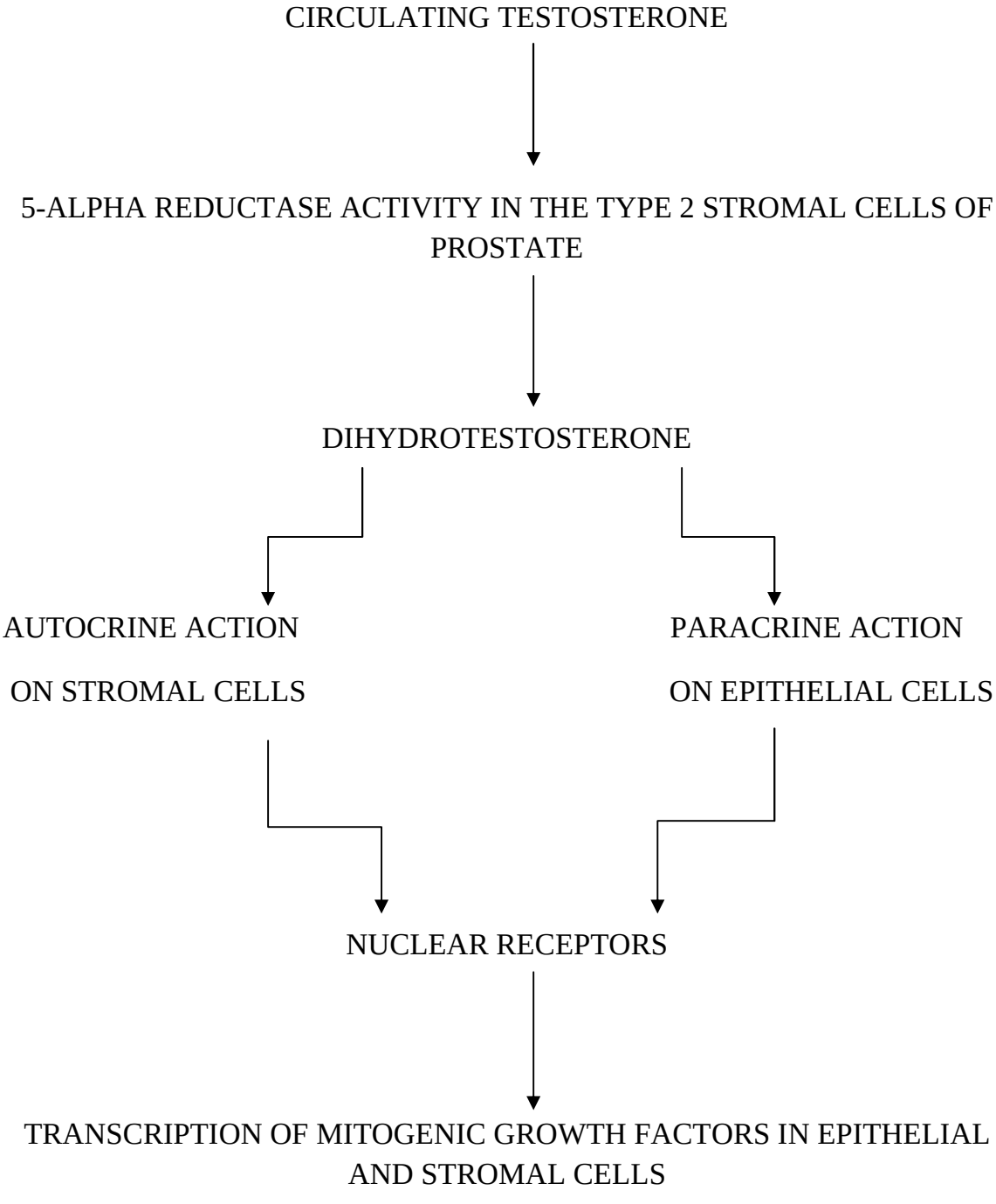
BPH if left untreated ,can be a developing disease. Stasis of bacteria in the bladder residue and an increased risk of urinary tract infection are the results of incomplete voiding . The crystallization of salts in the residual urine causes the formation of urinary bladder stones.. Urinary retention, named chronic or acute is another form of progression. In chronic urinary retention the residual urinary volume gradually increases, and the bladder swells, whereas, acute urinary retention is the inability to void. Bladder hypotonia is a result of this. Several patients who suffer from chronic urinary retention may ultimately develop obstructive uropathy, which in simple terms may be called renal failure.

Cause

Most experts consider androgens to play a lenient or progressive role. This means that for BPH to occur androgens have to be present, but it does not necessarily directly cause the condition. This is strengthened by the fact that castrated boys, when they advance in years, do not develop BPH, when they age. On the other hand, governing exogenous testosterone is not allied with a momentous increase in the hazard of BPH symptoms.

Role of Dihydrotestosterone (DHT)

Dihydrotestosterone , a metabolite of testosterone, is a perilous moderator of prostatic growth.



DHT is 10 times more persuasive than testosterone because it detaches from the androgen receptor very slowly. The significance of DHT in initiating nodular hyperplasia is reinforced by clinical observations in which an inhibitor of 5α-reductase such as finasteride is given to men with such condition. Therapy with a 5α-reductase inhibitor evidently reduces the DHT content of the prostate and, consequently the prostate volume is reduced and in many cases even the BPH symptoms are reduced.

Prostate in patients with BPH. A study shows that medical castration slashes the serum and prostate hormone levels disproportionately, having less effect on dihydrotestosterone and testosterone levels in cell proliferation is promoted by Testosterone, but fairly low levels of serum testosterone are found in the prostate.

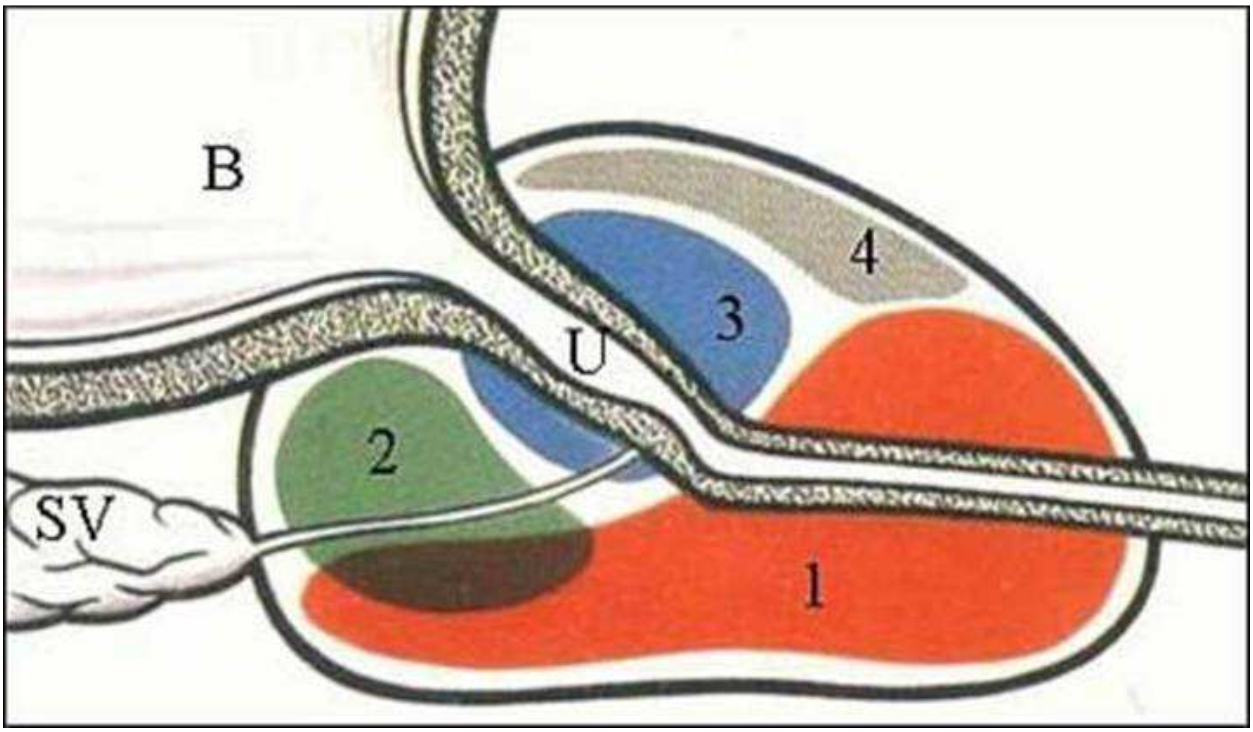
Whereas there is some indication that estrogen may play a vital role in the etiology of BPH, this effect appears to be intervened mainly through local conversion of androgens to estrogen in the prostate tissue instead of a direct effect of estrogen on its own. In canine, *in vivo* studies castration, which reduced androgen levels considerably but left the estrogen levels unchanged, and also caused substantial atrophy of the prostate. Studies looking for a link between prostatic hyperplasia and serum estrogen levels in humans have generally shown none.

Around the world, on a microscopic level, BPH can be seen in the huge difference of men as they age, in pricise over the age of 70 years. However, rates of clinically substantial, symptomatic BPH may vary radically depending on

lifestyle. Men leading a western lifestyle have a much higher prevalance of symptomatic BPH, than men leading a traditional or rural lifestyle. This is confirmed by A research in

China shows that men living in rural areas have very low rates of clinical BPH, while men living in cities who adopt a western lifestyle have a skyrocketing incidence of this condition, though it is still below rates seen in the West.

Anatomy



1= Peripheral Zone, **B = Bladder,**

2= Central Zone, **U = Urethra,**

3= Transitional Zone, **SV = Seminal Vesicle**

4= Anterior Fibromuscular Zone.

According to the McNeal's model of the prostate, four distinct anatomical zones may be distinguished as

1. The **peripheral zone**: is the area forming the postero-inferior aspect of the gland and represents 70% of the prostatic volume. It is the zone where the majority (60-70%) of prostate cancers form.
2. The **central zone**: contains the ejaculatory ducts and represents 25% of the prostate volume . This is the zone which normally gives rise to inflammatory processes (eg prostatitis).
3. The **transitional zone**: this represents only 5% of the total prostate volume. Benign prostatic hypertrophy occurs in this zone and consists of two lateral lobes together with periurethral glands. Approximately 25% of prostatic adenocarcinomas also occur it this zone.
4. The **anterior zone**: predominantly fibromuscular with no glandular structures.

The prostate weighs approximately 20g by the age of 20 and is in the shape of an inverted cone, with the bladder neck at the base and the apex at the urogenital at the diaphragm[8].The prostatic urethra does not follow a straight line as it runs through the centre of the prostate gland but it is actually bent anteriorly approximately 35 degrees at the verumontanum (where the ejaculatory ducts joins the prostate)

The prostate consists of epithelial elements and stromal. Fibroblasts, smooth muscle cells and endothelial cells are in the stroma and the epithelial cells are basal cells, secretory cells and neuroendocrine cells.

Both the glandular epithelial cells and the stromal cells (including muscular fibers) undergo hyperplasia in BPH. Most sources agree that of the two tissues, stromal hyperplasia is predominant, but the accurate ratio of the two is imprecise.

Anatomically, BPH is most strongly associated with the posterior urethral glands (PUG) and transitional zone (TZ) of the prostate. The initial microscopic signs of BPH generally begins between the age of 30 and 50 in the PUG, which are posterior to the proximal urethra. However, the majority of growth eventually occurs in the TZ. In addition to these two classic areas, the peripheral zone (PZ) of the prostate is also involved to a lesser extent. Subsequently prostatic cancer also occurs in the PZ. Hence to rule out cancer, BPH nodules in the PZ are often biopsied.

Diagnosis

Procedures in screening and diagnostic process for BPH.

Some signs to look for include

- Weak urinary stream
- Prolonged emptying of the bladder
- Abdominal straining
- Hesitancy

- Irregular need to urinate
- Incomplete bladder emptying
- Post-urination dribble
- Irritation during urination
- Frequent urination
- Need to urinate during the night
- Urgency
- Involuntary leakage of urine
- Bladder pain
- Painful urination
- Problems in ejaculation

The prostate, testicles and kidneys is often examined through ultrasound tests rule out malignancy and hydronephrosis.

Rectal examination that is palpation of the prostate through the rectum may reveal a markedly enlarged prostate, usually affecting the middle lobe.

Often, blood tests are performed to rule out prostatic malignancy: Elevated prostate specific antigen (PSA) levels needs further investigations such as reinterpretation of PSA results in terms of PSA free percentage and PSA density, and transrectal ultrasonography and rectal examination. These collective measures can provide early detection.

Management

Lifestyle

Patients should subside the intake of fluid before bedtime. moderate the consumption of products containing caffeine and alcohol should be moderate and voiding schedules should be followed appropriately.

Medications

5α-reductase inhibitors and alpha blockers are the two main medications for the management of BPH.

- Alpha blockers:

  In USA and Europe the most common choice for initial therapy are the Alpha blockers (technically α_1-adrenergic receptor antagonists). Doxazosin, terazosin, alfuzosin, tamsulosin, and silodosin are the Alpha blockers used for BPH. All the five alpha blockers are equally effective but have slightly different side effect summary. The older drugs phenoxybenzamine and prazosin are not recommended. Alpha blockers ease smooth muscle in the prostate and the bladder neck, therefore the blockage of urine flow is decreased. Orthostatic hypotension, ejaculation changes, nasal congestion, and weakness are the common side effects of alpha blockers.

- The 5α-reductase inhibitors:

  The other treatment option is finasteride and dutasteride of the 5α-reductase inhibitors. These medications inhibit 5a-reductase, which

consequently inhibits production of DHT, which is a hormone that is responsible for the enlarging of prostate. Results or effects may take a longer time to appear comparing to alpha blockers, but they persevere for many years. When this is used together with alpha blockers on patients with larger prostates, a reduction of BPH progression to acute urinary retention and surgery has been noted. The Side effects of this are decreased libido and ejaculatory or erectile dysfunction.

Antimuscarinics such as tolterodine may also be used, exceptionally in combination with alpha blockers. Their action decreases the acetylcholine effects on the smooth muscle of the bladder, as a result it helps to control the symptoms of an overactive bladder.

Herbal remedies

People often seek herbal remedies for BPH. European countries approve several remedies but the USA does not approve anything. The extract of saw palmetto from Serenoa repens is one of the most expansively studied. It displayed promise in early studies, yet no difference from placebo was indicated by the later trials of higher methodological quality. There are no known negative effects of saw palmetto, so if the supplement relieves symptoms are taken, undoubtedly there is a little harm. The quality of saw palmetto products differs considerably.

Other herbal medicines that have research support in systematic reviews include beta-sitosterol from Hypoxis rooperi (African star grass) and pygeum (extracted from Prunus africana's bark), while there is less significant support for

the efficacy of pumpkin seed (Cucurbita pepo) and stinging nettle root (Urtica dioica). There is weak indication that pollen extracts from rye grass (Secale cereale) may also correlate with modest symptomatic relief.

SURGERY

Prostate surgery may be recommended for patients with :

- Recurrent blood in the urine
- Recurrent urinary tract infections
- Kidney failure
- Bladder stones

The selection of a specific surgical procedure is usually based on the severity of your symptoms and the size and shape of your prostate gland.

- **Transurethral resection of the prostate (TURP):** This is the most common and most proven surgical treatment for BPH. A scope is inserted through the penis to remove the prostate piece by piece in the procedure of TURP.
- **Transurethral incision of the prostate (TUIP):** This procedure is quiet similar to TURP, but performed in men who have a smaller prostate. In this surgery the patient need not be hospitalized. Like TURP, a scope is inserted till the prostate, through the penis. Instead of removing the prostate, a small slit is made in the prostate tissue to enlarge the opening of the urethra and bladder outlet.

- **Simple prostatectomy:** An open prostatectomy is usually performed using spinal or general anesthesia. An incision is made through the abdomen or perineum. The inner part of the prostate gland alone is is removed. The outer portion is not disturbed. This is a prolonged procedure, and it normally requires a hospital stay of 5 to 10 days.

Men who undergo prostate surgery have considerable improvement in urine flow rates and symptoms.

Other, less-invasive procedures are also available. Different forms of heat is used in this procedure to destroy prostate tissue. But none has been proved to be better than TURP. Patients who undergo these less-invasive procedures are more likely to need surgery again after 5 or 10 years. Yet, these procedures may be an option for:

- Younger men because many of the less-invasive procedures carry a lower risk of incontinence and impotence than TURP, risk with TURP is not really high.
- Elderly patients
- Patients with intense medical conditions, such as cirrhosis, uncontrolled diabetes, psychosis, alcoholism and serious kidney, lung or heart disease.
- Men who take blood-thinning drugs.

SELF-CARE

For mild symptoms:

- Urinate when you first get the urge. Also, go to the toilet whenever you have the chance, even if you don't feel like urinating.
- Avoid caffeine and alcohol, exceptionally after dinner.
- Don't take a lot of liquid diet at the same time. Take fluids in equal intervals. Avoid drinking anything before 2 hours of bedtime.
- Try NOT to take over-the-counter cold and sinus medications that contain antihistamines or decongestants. Because they can increase the symptoms of BPH.
- Keep warm and exercise consistently. Symptoms may worsen due to cold weather and lack of physical activity.
- Learn and carry out Kegel exercises which are pelvic strengthening exercises.
- Reduce stress. Nervousness and tension can lead to more frequent urination.

MATERIALS AND METHODS

Selection of the patients

Forty Male patients between the age group 50 - 90 years suffering from Vatha Vaththi Kirichanam were screened and selected. Among them 20 were treated as out – patients. Remaining 20 were admitted as in-Patient in the department of P.G. Medicine, Government siddha medicine college and hospital, Palayamkottai, After the discharge of in –patients, they were followed up as out – patients for some days. Professor, Reader and Asst Lecturer of this department guided and supervised throughout the entire study.

During this study detailed personal history, relevant past history, occupation, habits, clinical symptoms and their duration were obtained from each and every patient.

For this purpose case sheets were prepared based on both siddha and modern concepts. They were maintained separately for all cases.

Investigation

With the help of Poriyyal arithal, Pulanaal arithal, Vinaathal, Mukkutra nilaigal, 7 udal kattugal, envagai thervugal investigations were made, Simultaneously all the cases were subjected to routine clinical and pathological examinations.

IPSS (International Prostate Symptom Score) was carried out before and after the treatment.

Trial Medicine

The medicine chosen for this study was Sindhuvalladhi. 500mg twice a day with water .

Reference

Agathiyar Valladhi 600

The trial medicines was prepared in the Post Graduate practical hall, under the guidance of staff of the Post Graduate Pothu Maruthuvam Department.

Evaluation of trial medicines

The trail medicines was subjected to Pharmacological analysis at K.M College of Pharmacy, Madurai and Biochemical analysis, at the Bio Chemistry Laboratory, Govt. Siddha Medical College, Palayamkottai.

Results and Observations

The results were observed with respect to the following criteria by clinical study on 20 In-patients and 20 Out-patients.

1. Age Distribution
2. Kaalam Distribution
3. Constitution of the body (Thegi)
4. Gunam
5. Religion
6. Occupational Status
7. Socio Economic Status
8. Habits
9. Dietary Pattern
10. Paruva Kaalam
11. Thinai Distribution
12. Weight Distribution
13. Clinical Features

14. Associated Symptoms

15. Kosangal

16. Mukkuttram

    a) Vatham

    b) Pitham

    c) Kapham

17. Ezhu Udalkatthugal

18. Envagai Thevugal

19. Neerkuri

20. Neikuri

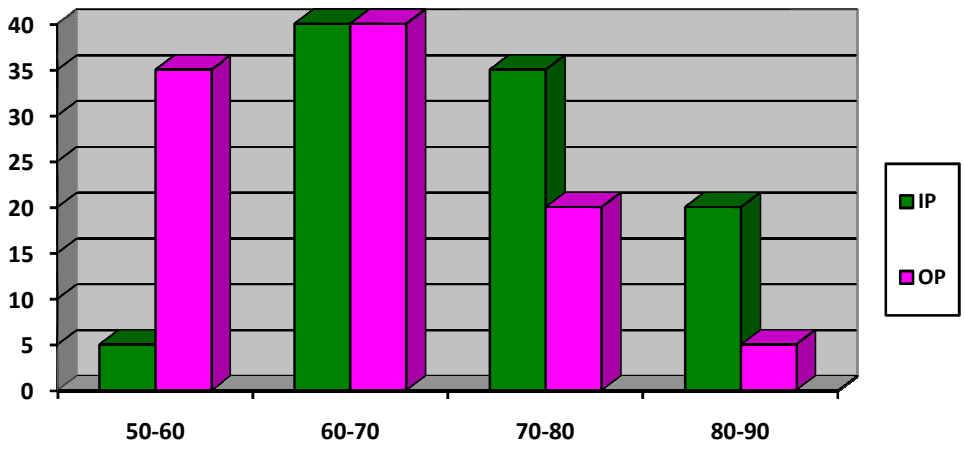
21. Investigations

22. Clinical Assessment

1. Age Distribution

Table - 1 Illustrates the age distribution and its relative percentage.

Sl.No	Age group in Years	In-Patients		Out-Patients	
		No. of cases	Percentage	No. of. Cases.	Percentage
1	50-60	1	5	7	35
2	61-70	8	40	8	40
3	71-80	7	35	4	20
4	81-90	4	20	1	5

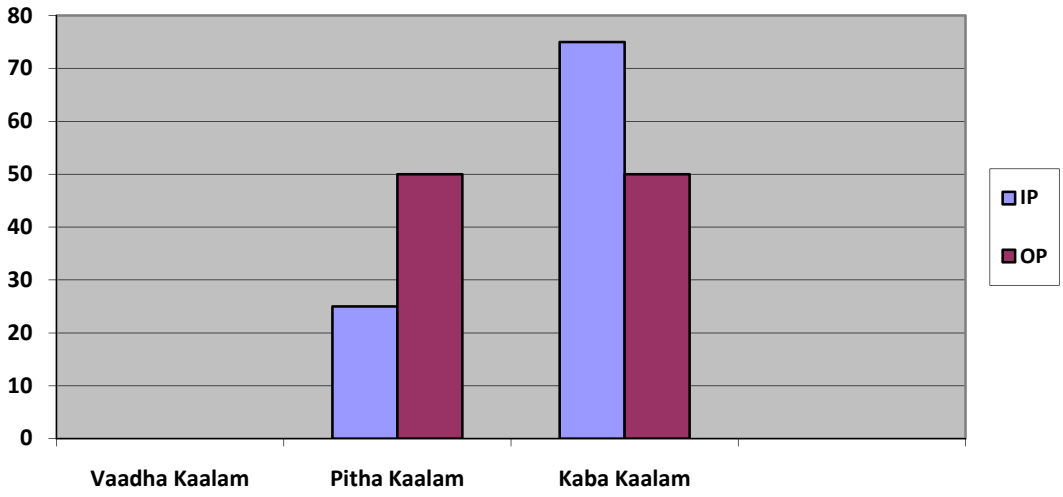


2. Kaalam

Table - 2 Illustrates the Kaalam and its relative percentage.

Sl.No	Kaalam	In-Patients		Out-Patients	
		No. of cases	Percentage	No. of. Cases.	Percentage
1	Vatha Kaalam	-	-	-	-
2	Pitha Kaalam	5	25	10	50
3	Kaba Kaalam	15	75	10	50

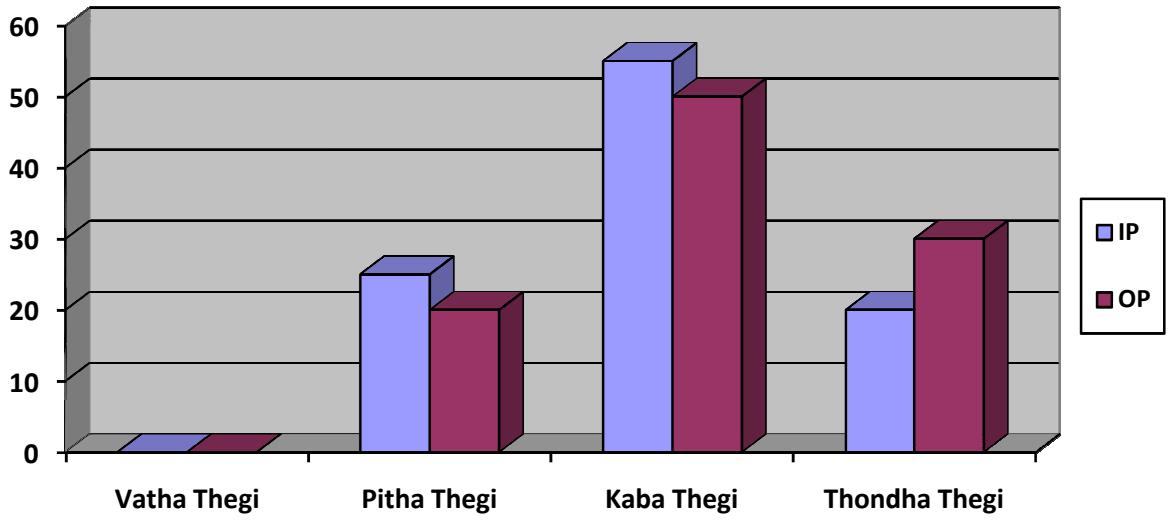
From the above study, the maximum number of cases was treated in Pitha Kaalam and Kaba kaalam



3. Constitution of the body (Thegi)

Table - 3 Illustrates the Constitution of the body and its relative percentage.

Sl.No	Constitution of the body (Thegi)	In-Patients		Out-Patients	
		No. of cases	Percentage	No. of. Cases.	Percentage
1	Vatha thegi	-	-	-	-
2	Pitha thegi	5	25	4	20
3	Kaba thegi	11	55	10	50
4	Thondha thegi	4	20	6	30

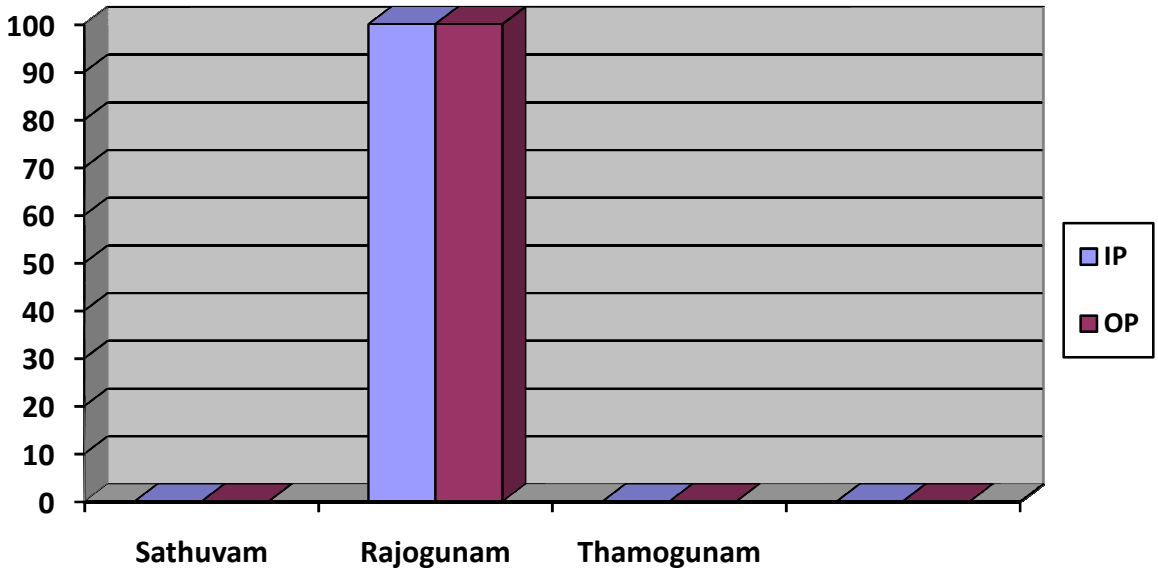


4. Gunam

Table - 4 Illustrates the Gunam and its relative percentage.

Sl.No	Gunam	In-Patients		Out-Patients	
		No. of cases	Percentage	No. of. Cases.	Percentage
1	Sathuvam	-	-	-	-
2	Rajogunam	20	100	20	100
3	Thamogunam	-	-	-	-

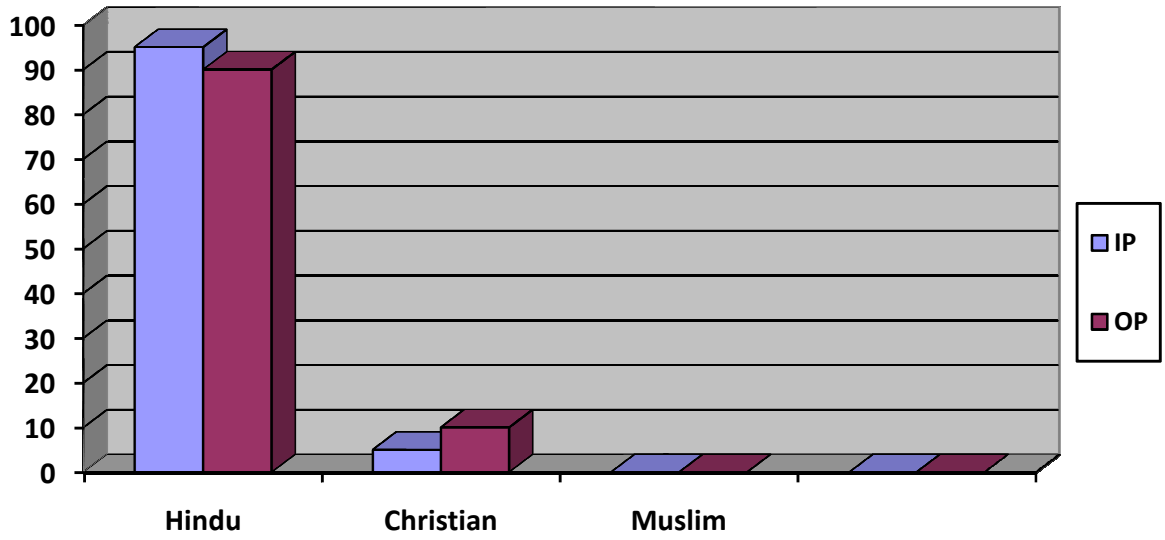
In this Patient study, 100 percent cases belongs to Rajogunam.



5. Religion

Table - 5 Illustrates the Religion and its relative percentage.

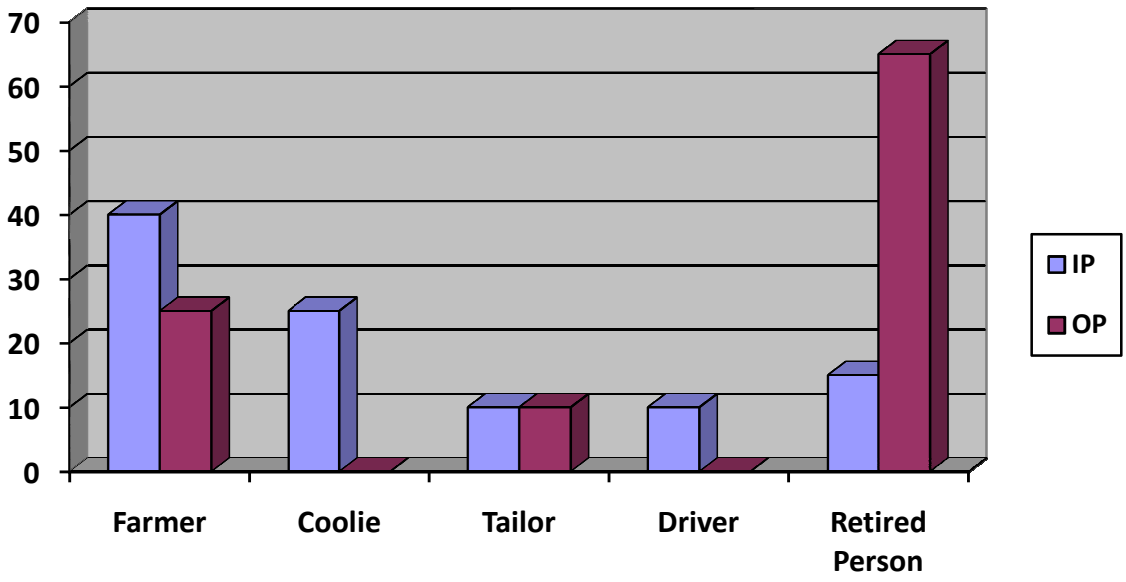
Sl.No	Religion	In-Patients		Out-Patients	
		No. of cases	Percentage	No. of. Cases.	Percentage
1	Hindu	19	95	18	90
2	Christian	1	5	2	10
3	Muslim	-	-	-	-



6. Occupational Status

Table - 6 Illustrates Occupation and its relative percentage.

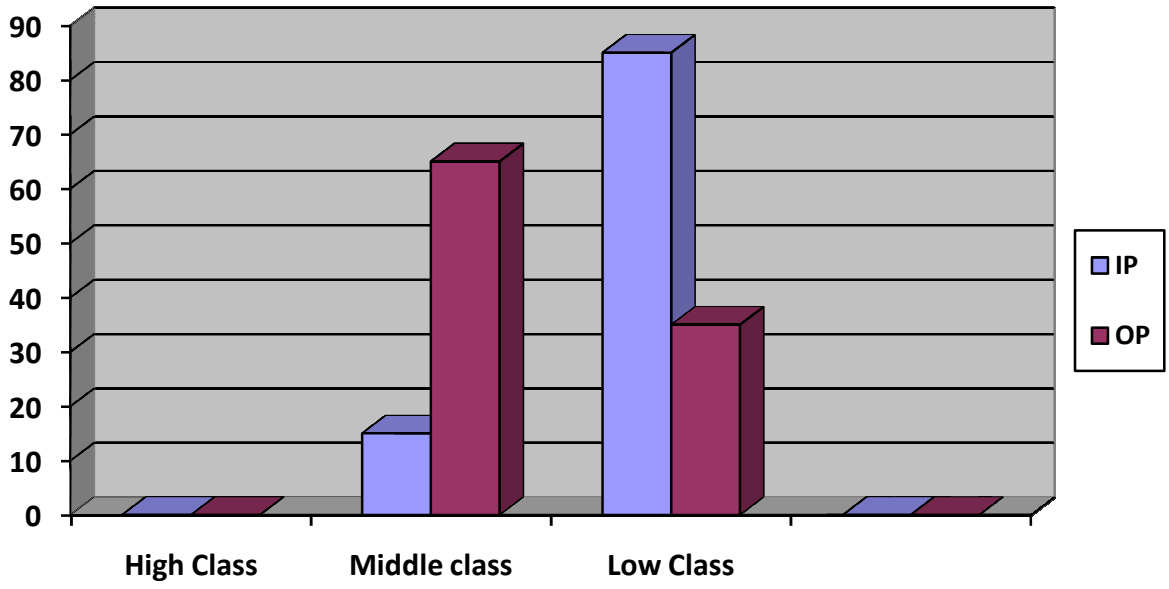
Sl.No	Type of work	In-Patients		Out-Patients	
		No. of cases	Percentage	No. of. Cases.	Percentage
1	Farmer	8	40	5	25
2	Coolie	5	25	-	-
3	Tailor	2	10	2	10
4	Driver	2	10	-	-
5	Retired Person	3	15	13	65



7. Socio-economic Status

Table - 7 Illustrates the Socio-economic status and its relative percentage.

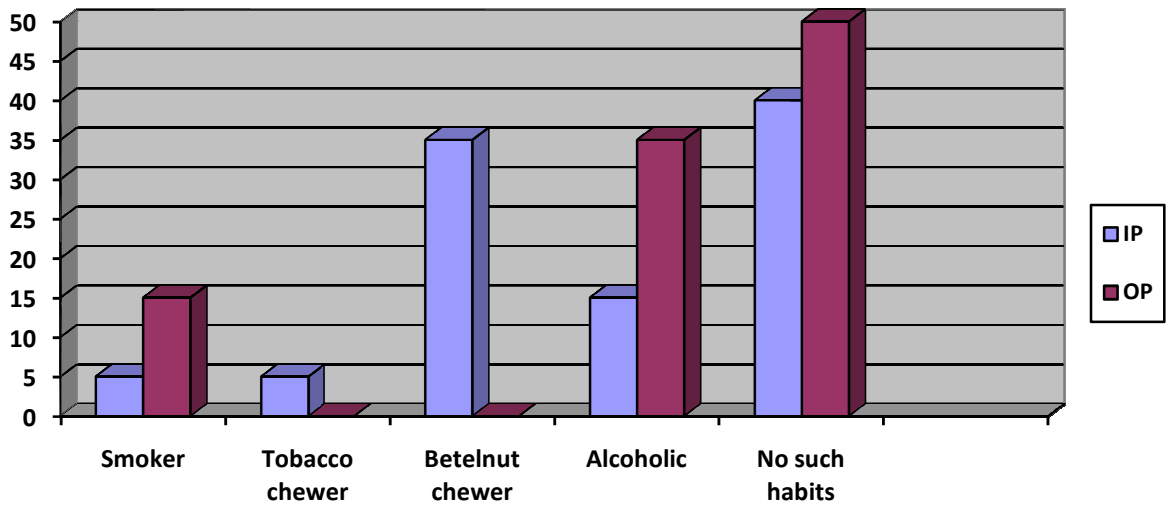
Sl.No	Socio-economic status	In-Patients		Out-Patients	
		No. of cases	Percentage	No. of. Cases.	Percentage
1	High Class	-	-	-	-
2	Middle Class	3	15	13	65
3	Low Class	17	85	7	35



8. Habits

Table - 8 Illustrates the Habits and its relative percentage.

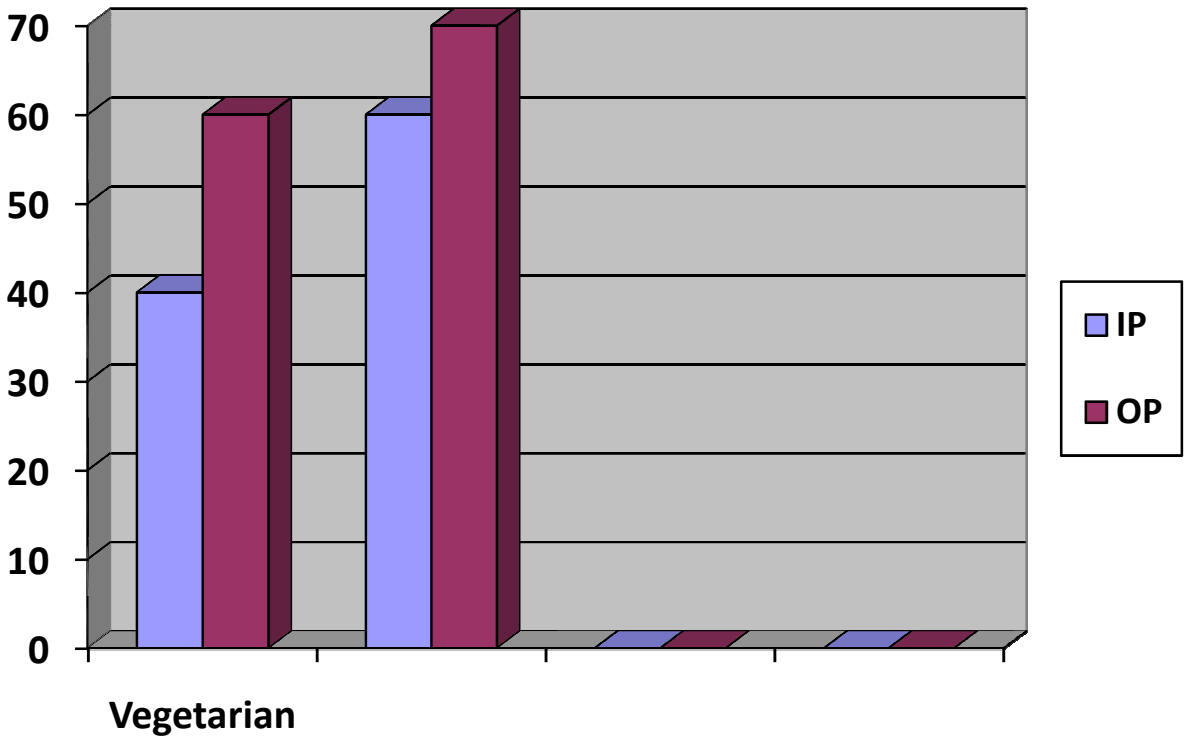
Sl.No	Habits	In-Patients		Out-Patients	
		No. of cases	Percentage	No. of. Cases.	Percentage
1	Smoker	1	5	3	15
2	Tobacco chewer	1	5	-	-
3	Betelnut chewer	7	35	-	-
4	Alcoholic	3	15	7	35
5	No such habits	8	40	10	50



9. Dietary Pattern

Table - 9 Illustrates the Dietary Pattern and its relative percentage.

Sl.No	Dietary Pattern	In-Patients		Out-Patients	
		No. of cases	Percentage	No. of. Cases.	Percentage
1	Vegetarian	8	40	6	30
2	Mixed diet	12	60	14	70



10. Paruva Kaalam

Table - 10 Illustrates the Paruva Kaalam and its relative percentage.

Sl.No	Paruva Kaalam	Months	In-Patients		Out-Patients	
			No. of cases	Percentage	No. of. Cases.	Percentage
1	Kaarkaalam	Aavani, purattasi	14	70	9	45
2	Koothirkaalam	Iyppasi,karthigai	2	10	2	10
3	Munpanikaalam	Markazhi,tai	-	-	-	-
4	Pinpani Kaalam	Masi,panguni	-	-	-	-
5	Elavenil kaalam	Chithirai,vaikasi	-	-	-	-
6	Mudhuvenilkaalam	Aani,aadi	4	20	9	45

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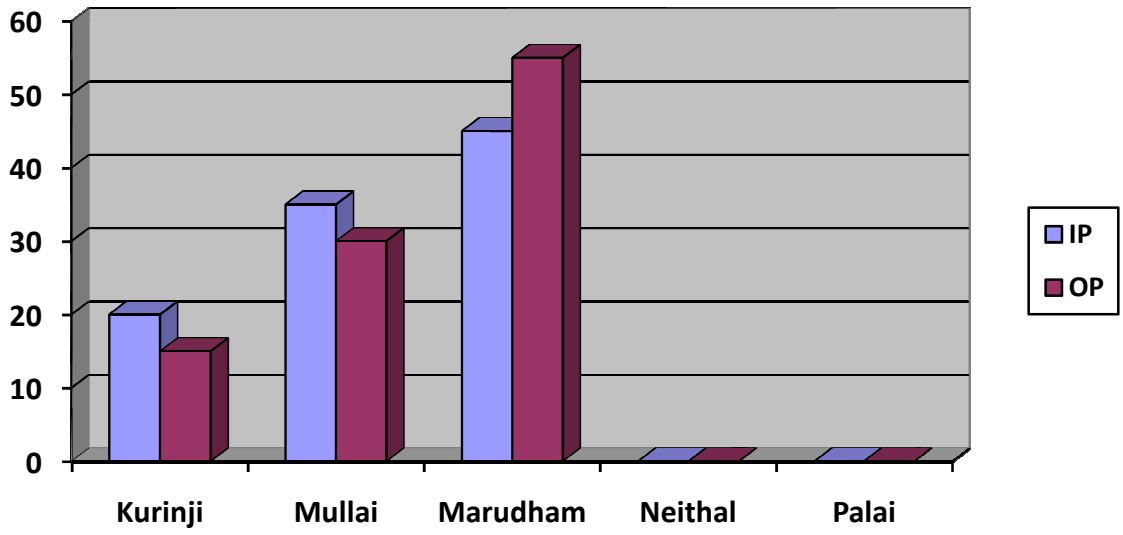
11. Thinai

Table - 11 Illustrates the Thinai and its relative percentage.

Sl.No	Thinai	In-Patients		Out-Patients	
		No. of cases	Percentage	No. of. Cases.	Percentage
1	Kurinchi	4	20	3	15
2	Mullai	7	35	6	30
3	Marutham	9	45	11	55
4	Neithal	-	-	-	-
5	Palai	-	-	-	-



12. Weight Distribution

Table - 12 Illustrates the Weight and its relative percentage.

Sl.No	Weight	In-Patients		Out-Patients	
		No. of cases	Percentage	No. of. Cases.	Percentage
1	Under wt	4	20	3	15
2	Normal	9	45	12	60
3	Over wt	7	35	5	25

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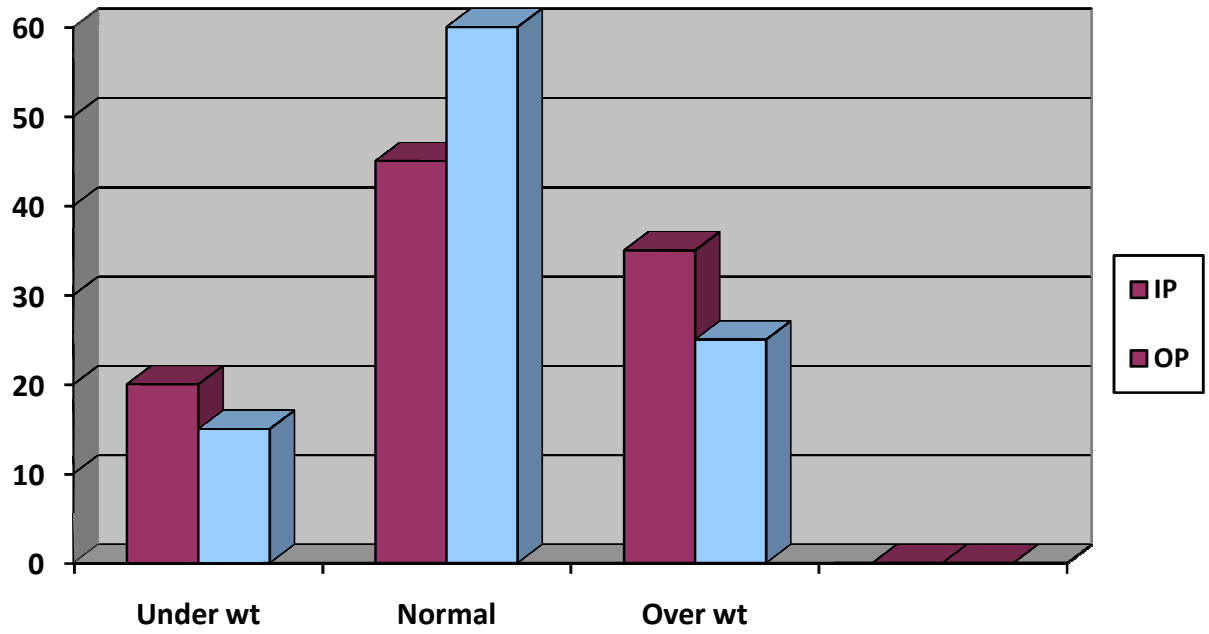


13. Clinical Features :

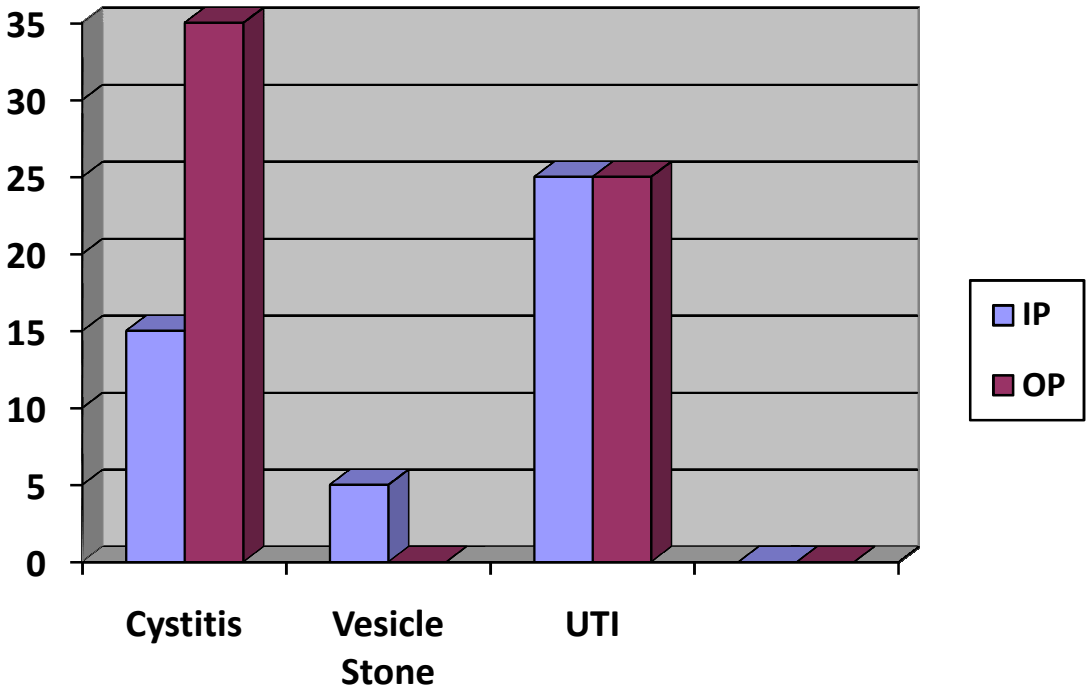
Table - 13 Illustrates the clinical features and its relative percentage.

Sl.No	Associated Symptoms	In-Patients		Out-Patients	
		No. of cases	Percentage	No. of. Cases	Percentage
1	Incomplete Emptying (Post void Urination)	14	70	15	75
2	Intermittency	14	70	18	90
3	Frequency	17	85	20	100
4	Urgency	17	85	17	85
5	Nocturia	18	90	19	95
6	Straining	11	55	13	65
7	Weak Stream	20	100	18	90

14. Associated Symptoms :

Table - 14 Illustrates the Associated Symptoms and its relative percentage.

Sl.No	Associated Symptoms	In-Patients		Out-Patients	
		No. of cases	Percentage	No. of. Cases	Percentage
1	Cystitis	3	15	7	35
2	Vesicle Stone	1	5	-	-
3	UTI	5	25	5	25



15. Kosangal :

Table - 15 Illustrates the Kosam and its relative percentage.

SL.NO	Kosangal	In-Patients		Out-Patients	
		No. of cases	Percentage	No. of. Cases	Percentage
1	Annamaya Kosam	-	-	-	-
2	Pranamaya kosam	-	-	-	-
3	Manomaya kosam	5	25	7	35
4	Vignanamaya kosam	5	25	7	35
5	Ananthamaya kosam	-	-	-	-

16. a.Disturbances in Vatham :

Table - 16 Illustrates the disturbance in vatham and its relative percentage.

Sl.No	Vatham	In-Patients		Out-Patients	
		No. of cases	Percentage	No. of. Cases	Percentage
1	Praanan	-	-	-	-
2	Abaanan	20	100	20	100
3	Viyaanan	-	-	-	-
4	Udhaanan	-	-	-	-
5	Samanan	20	100	20	100
6	Naagan	-	-	-	-
7	Koorman	3	15	2	10
8	Kirukaran	-	-	-	-
9	Devathathan	6	30	4	20
10	Dhananjeyan	-	-	-	-

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16.b. Disturbances in Pitham :

Table - 16(b) Illustrates the disturbances in Pitham and its relative percentage.

Sl.No	Pitham	In-Patients		Out-Patients	
		No. of cases	Percentage	No. of. Cases	Percentage
1	Analpitham	-	-	-	-
2	Ranjagam	-	-	-	-
3	Saathagam	18	90	15	75
4	Praasagam	-	-	-	-
5	Aalosagam	3	15	2	10

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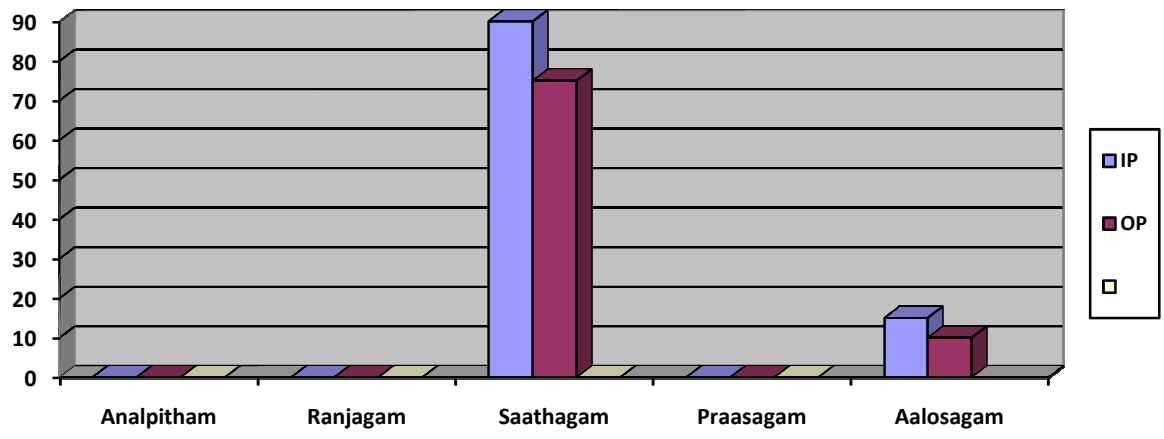

16.c. Disturbances in Kapham :

Table - 16(c) Illustrates the Kapham and its relative percentage.

Sl.No	Kapham	In-Patients		Out-Patients	
		No. of cases	Percentage	No. of. Cases	Percentage
1	Avalambagam	-	-	-	-
2	Kilaethagam	-	-	-	-
3	Pothagam	-	-	-	-
4	Tharpagam	-	-	-	-
5	Santhigam	9	45	6	30

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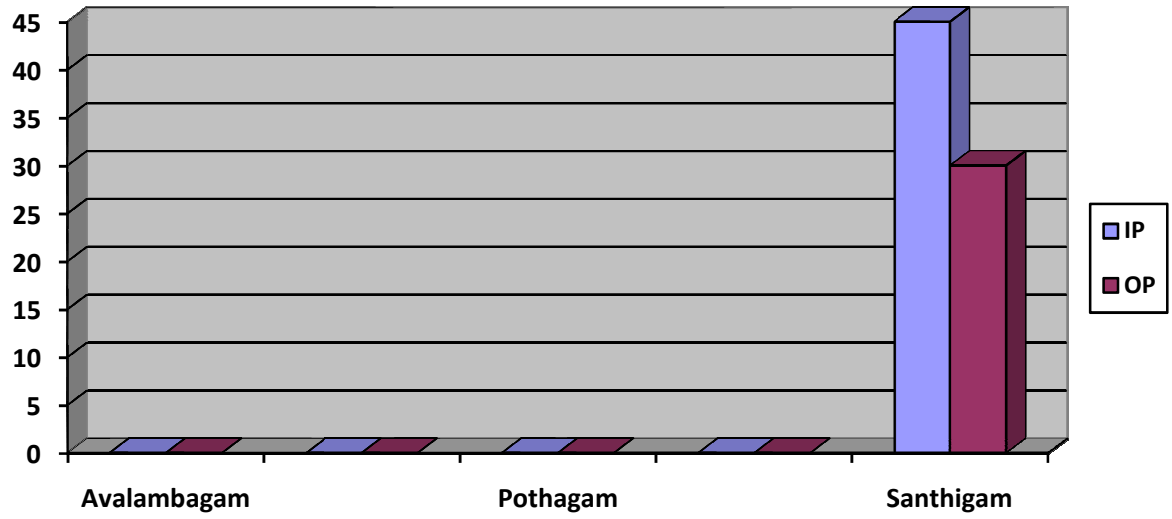


17. Involvement of Ezhu Udalkattugal :

Table - 17 Illustrates the involvement of ezhu Udalkattugal and its relative percentage.

Sl.No	Udalkattugal	In-Patients		Out-Patients	
		No. of cases	Percentage	No. of. Cases	Percentage
1	Saaram [Chyme]	20	100	20	100
2	Senneer [Blood]	7	35	5	25
3	Oon [Muscle]	-	-	-	-
4	Kozhuppu [Fat]	9	45	6	30
5	Enbu [Bones]	9	45	6	30
6	Moolai [Bone marrow]	-	-	-	-
7	Sukkilam [Genital discharges]	-	-	-	-

18. Envagai Thervugal :

Table - 18 Illustrates the Condition of envagai Thervugal and its relative percentage.

Sl.No	Envagai Thervugal	In-Patients		Out-Patients	
		No. of cases	Percentage	No. of. Cases	Percentage
1	Naa	-	-	-	-
2	Niram	-	-	-	-
3	Mozhi	-	-	-	-
4	Vizhi	-	-	-	-
5	Malam	-	-	-	-
6	Moothiram	20	100	20	100
7	Sparisam	-	-	-	-
8	Naadi				
	a) Vatha pitham	10	50	6	30
	b) Vatham kabam	1	5	3	15
	c) Pitham vatham	6	30	8	40
	d) Pitham kabam	-	-	-	-
	e)Kaba vatham	3	15	3	15
	f) Kaba pitham	-	-	-	-

19. Neerkuri :

Sl.No	Type of test result	In-Patients		Out-Patients	
		No. of cases	Percentage	No. of. Cases	Percentage
1	Niram	8	40	5	25
2	Manam	12	60	15	75
3	Edai	-	-	-	-
4	Nurai	3	15	7	35
5	Enjal	-	-	-	-

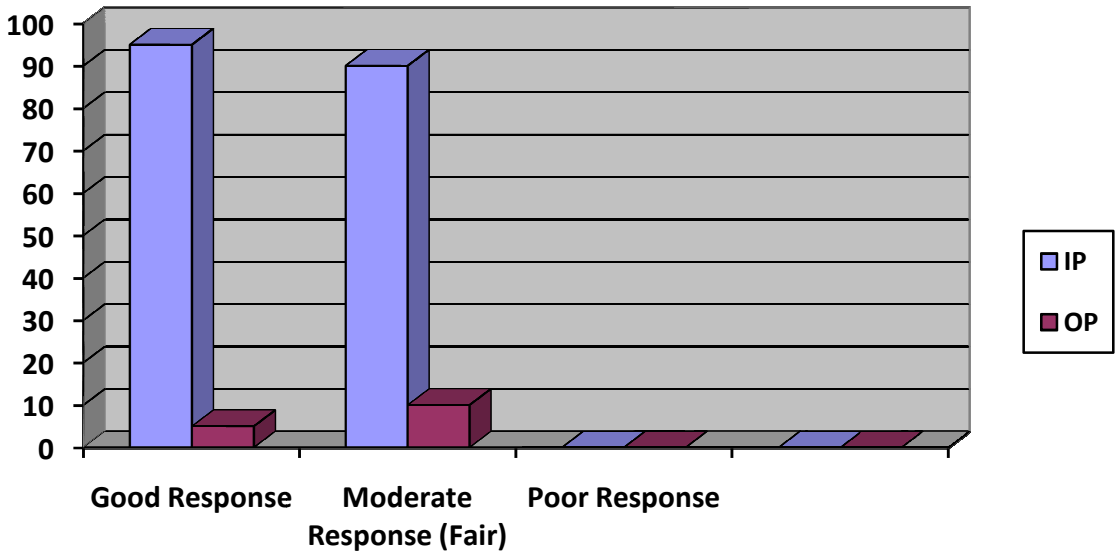
20. Neikuri :

Sl.No	Type of test result	In-Patients		Out-Patients	
		No. of cases	Percentage	No. of. Cases	Percentage
1	Vatha neer	8	40	9	45
2	Pitha neer	7	35	6	30
3	Kaba neer	5	25	5	25

22. Assessment of Result :

Table - 22 Illustrates the Assessment of Result and its relative percentage.

Sl.No	Result	In-Patients		Out-Patients	
		No. of cases	Percentage	No. of. Cases	Percentage
1	Good Response	19	95	18	90
2	Moderate Response(Fair)	1	5	2	10
3	Poor Response	-	-	-	-



DISCUSSION

Efficacy of siddha system in curing the vatha vaththi kirichanam prompted me to carry out clinical and scientific study in this disease. For this clinical trail 20 patients were selected and admitted as In-patients in Post Graduate Department of Pothu Marthuvam and were treated with the trial medicine. After discharge all the twenty patients were followed as the Out patients.

The medicine was also trialed with 20 Out-patients in the Out-patients Department of Pothu Maruthuvam.

The results were clearly observed and recorded under the supervision of Professor, Reader and Assistant lecturer. The observed results were discussed here.

1. Age Distribution

Among the In-patients 5% of the patients were affected in the age groups of 50-60 years, 40 % of the patients were affected in the age group of 61-70 years, 35% of the patients were affected in the age group of 71 – 80. 20% of the patients were affected in the age group of 81- 90 years.

Among the Out-patients 35% of the patients were affected in the

age group of 50-60 years and 40% of each of the patients were affected in the age group of 61-70 years and 20% of each of the patients were affected in the age group of 71-80 years, 5% of the patients were affected in the age group of 81-90.

So the occurrence of the disease was found in male patients above 50 years

2. Kaalam Distribution

Among the In - Patients 25% were affected in Pitha Kaalam and 75% were affected in Kaba Kaalam. Among the Out - Patients 50 % were affected in Pitha Kaalam and 50 % were affected in Kaba Kaalam.

The table showed the increased incidence of the disease in the Pitha Kaalam and kaba kaalam

3.Thegi Distribution

25% of the In-patients and 20% of the Out-patients were pitha thegi. 55% of the In-patients and 50% of the Out-patients were kaba thegi and 20% of the In-patients and 30% of the Out-patients were thondha thegi.

4. Gunam Distribution

Among the In – Patients and out-patients, 100% had rajogunam

5. Religion Distribution

Among the In-Patients 95% were Hindus, 5% were Christians. Among the Out-Patients 90% were Hindus, 10% were Christians, 15% were Muslims.

6. Occupational Status

Among the In-Patients 40% were farmers,25% were Coolie,10% were Tailors,10% were Drivers and 15% were Retired Persons.

Among the Out-Patients 25% were farmers ,10% were Tailors and 65% were Retired Persons.

7.Socio Economic status

Among the In-Patients 85% were lower class and 15% were middle class.

Among the Out-Patients 35% were lower class and 65% were middle class.

8. Habits

Among the In-patients 5% of the patients were smokers, 5% of the patients were tobacco chewers,35% of the patients were betel nut chewers, 15% of the patients were alcoholics and Other 40% had no such habits.

Among the Out-patients 15% of the patients were smokers, 35% of the patients were alcoholics and Other 50% had no such habits.

9. Diet

Among the In-patients 60% of the patients had mixed diet and 40% had

vegetarian diet. Among the Out-patients, 70% of the patients had mixed diet and 30% had vegetarian diet.

10.Paruva Kaalam Distribution

Among the In-patients 70% of the incidence of the disease fall under the Kaar Kaalam i.e. Avani & Purattasi (August & September) 10% of the incidence fall under the Koothir Kaalam i.e. Iypasi & Karthigai (October & November). 20% of the incidence fall under the MudhuvenilKaalam that is the Aani & Aadi (June & July)

Among the Out-patients 45% of the incidence fall under the Kaar Kaalam i.e. Aavani & Purattasi (August & September) 10% of the incidence fall under the Koothir Kaalam i.e. Iypasi & Karthigai (October & November) and 45% each of the incidence fall under the Muthuvenil Kaalam i.e. Aani & Aadi (June & July)

11. Thinai Distribution

Among the In-patients 45% belonged to the Marutham and 35% belonged to the Mullai and 20% belonged to the kurunchi.

Among the Out-patients, 55% belonged to the Marutham and 30% belonged to the Mullai and 15% belongs to the kurunchi.

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12. Weight Distribution

Among the In-patients 20% were under weight, 45% were normal weight and 35% were over weight..

Among the Out-patients 15% were under weight, 60% were normal weight and 25% were over weight.

13. Distribution of Clinical Features

The data from the observation showed that

Incomplete Emptying was present in 70% of the In-patients and 75% of the Out-patients. Intermittency was present in 70% of the In-patients and 90% of the Out-patients. Frequency was present in 85% of the In-patients and 100% of the Out-patients. Urgency was present in 85% of the In-patients and 85% of the Out-patients. Nocturia was present in 90% of the In-patients and 95% of the Out-patients. Straining was present in 55% of the In-patients and 65% of the Out-patients. Weak stream was present in 100% of the In-patients and 90% of the Out-patients.

14. Associated symptoms

Among the In-patients 15% of the patients were affected with cystitis, 5% of the patients had the bladder stone and 25% of the patients were affected with UTI.

Among the Out-patients 35% of the patients were affected with

cystitis and 25% of the patients were affected with UTI.

15. Kosangal

Manomaya kosam affected in 25% and Vingyana maya kosam was affected in 25% of In-patients. .

Manomaya kosam affected in 35% and Vingyana maya kosam was affected in 35% of Out-patients.

16. Mukkutram a. Vatham b.Pitham c. Kabam

a. Vatham

Abanan and samanan were affected in 100% of In-patients and Out-patients. Devathathan was affected in 30% of the In-patients, and 20% of the Out-patients. Koorman was affected in 15% of the In-patients, and 10% of the Out-patients.

. Abanan is resposible for excretion of urine and motion. This vayu was affected in this disease.

Samanan is responsible for controlling other vayus. Since samanan cannot control other vayus, it affected in this discase,

Koorman is responsible for vision. In the clinical trial this vayu was affected due to aging.

Devathathan is responsible for tiredness after sleep and emotion.

b. Pitham

Sadhaga pitham was affected in 90% of the In-patients and 75% of the Out-patients. Aalosaga pitham was affected in 15% of the In-patients and 10% of the Out-patients.

c. Kabam

Sandhigam was affected in 45% of the In-patients and 30% of the Out-patients.

Sandhigam resides in the joints and helps for movement. Since, there was Joint pain, it was affected. It was may be due to their aging.

17. Ezhu udal kattugal

In Ezhu udal kattugal, saaram was affected in 100% of the In-patients and Out-patients. Enbu and Kozhuppu were affected in 45% of the In-patients and 35% of the Out-patients. Senner was affected in 35% of the In-patients and 25% of the Out-patients.

Enbu and Kozhuppu are responsible for the movements of the body and gives lubrication to the joint cavities. Since, there was joint pain, these two were affected may be due to aging.

18. En vagai thervugal

In Naadi, 50% of the In-patients and 30% of the Out-patients had vatha pitha naadi. 5% of the In-patients and 15% of the out- patients had vatha kaba naadi. 30% of the In-patients and 40% of the Out-patients had pitha vatha naadi. 15% of the In-patients and 15% of the Out-patients had kaba vatha naadi.

19. Neerkuri

Manam was affected in 60% of In-patients and 75% of the Out-patients. Niram was affected in 45% of In-patients and 25% of the Out-patients. Nurai was affected in 15% of In-patients and 35% of the Out-patients.

20. Neikuri

In Neikuri 40% of the In-patients and 45% of the Out- patients had vatha neer, 35% of the In-patients and 30% of the Out patients had pitha neer and 25% of the In-patients and 25% of the Out patients had kaba neer

21. Laboratory Investigations :

Routine investigations of blood and urine were done during the admission and at the end of the treatment for all cases.

Before treatment Ultra sonography study was taken in all Out-patients and In-patients and PSA study is taken to rule out Ca prostate.

After treatment Ultra sonography report showed decrease in the size, volume of the prostate and residual Urine. So it proves that the trial drug was reduced BPH.

22.Clinical Assessment:

Among the In-patients 95% were showed good response and 5% showed Moderate response.

Among the Out-patients 90% were showed good response and 10% showed Moderate response.

SUMMARY

Vatha vaththi kirichanam (Benign Prostate Hyperplasia) is a disease which affect quality of life among the geriatric population, this disease has the correlation with Benign prostatic hyperplasia of modern science.

The most common symptoms are urinary frequency, urgency, intermittency, nocturia, weak stream, straining and incomplete emptying of the bladder.

For this clinical study 20 male patients of age above 50 groups were selected and admitted as In-patients in Post Graduate Department of Pothu Maruthuvam. After the discharge all the 20 patients were followed as out patients.

20 out-patients were selected and treated in Out-patients Department of PG Pothu Maruthuvam

Sindhu valladhi(500mg twice daily after meal) was taken as trail medicine for this dissertation work.

- The results of this clinical trial were found to be very encouraging in almost every cases. There was marked improvement within few days of treatment.
- There were no clinical side effects, toxic effects during the course of treatment.

- My trial drug when experimented on patients who had both BPH and renal calculus, renal calculus has completely cured.
- Anti microbial study showed that the trial drug Sindhu Valladhi was sensitive against Pseudomonas aeruginosa and moderately sensitive against Streptococcus pneumonia and Escherichia coli.
- Bio chemical analysis showed that the given sample of Sindhu Valladhi contains chloride, ferrous iron, unsaturated compound and reducing sugar.
- Pharmacological analysis showed that the trial drug, Sindhu valladhi has significant Antiandrogenic activity.
- Clinically 95% of the patients showed good results.

CONCLUSION

- In this pre clinical and randomized phase II trial, the results were found to be good in 95% of IP cases, 90% of OP cases, fair in 5% of IP cases and 10% of Op cases.

- Clinically the trial medicine was very effective to the suffering patients and relieved the symptoms.

- Further follow up of all these patients showed efficacy of medicine.

- Clinical study showed no adverse effects of trial medicine during the study.

- Uses of Sindhu Valladhi is clinically effective and safe in the management of BPH.

- It is concluded that Vatha Vaththi Kirichanam is controlled by the drug Sindhu Valladhi (500mg-BD).

PREPARATIONS OF TRIAL MEDICINE

சிந்து வல்லாதி

நினைவான பழம்புளிதான் பலமோ நான்கு
நிறையவே சேங்கொட்டை பலந்தான் நான்கு
கனமான முருக்கிலையில் தூளுமூன்று
கட்டான கறியுப்பு பலமோ ரெண்டு
தனமான வெங்காரம் பலமு மொன்று
தப்பாதே வெடியுப்பு இரண்டு தானும்
சினமாக உரலிலிடி மைனம் போலே
திரட்டியே சுண்டைக்காய் அளவு கொள்ளே
கொள்ளவே நீரடைப்பு பவுத்திர சூலை
குடிகெடுத்த கல்லடைப்புக் குன்ம வாயு
மெள்ளவே குடல்படுவன் அண்ட வாயு
விழிலான தசையடைப்பு உதிர வாயு
கிள்ளவே மறைந்திருந்த பெருநீர்க் கோவை
கேட்குமடா காந்தத்தைச் சேர்த்துக் கொள்ளு
துள்ளவே வந்தநோய் தொலைந்து போகும்
சுந்தரிக்கு ஈசனன்று சொன்னவாறே

- **அகத்தியர் வல்லாதி - 600**

பழம்புளி - 4 பலம்

சேங்கொட்டை - 4 பலம்

முருக்கிலை பொடி - 3 பலம்

கறியுப்பு - 2 பலம்

வெடியுப்பு - 2 பலம்

வெங்காரம் - 1 பலம்

ஆகியவற்றை உரலிலிட்டு நன்றாக இடித்து மெழுகு பதத்தில் எடுத்து வைத்துக் கொள்ள வேண்டும்.

அளவு : சுண்டைக்காய்

தீரும் நோய்கள் : தசையடைப்பு, நீரடைப்பு, பவுத்திரம், சூலை, கல்லடைப்பு, குன்மவாயு, குடல்படுவன், அண்டவாயு, , உதிரவாயு, பெருநீர்க்கோவை.

PROPERTIES OF THE TRIAL MEDICINE

1.SINDHU VALLADHI:

INGREDIENTS:

1. பழம்புளி (Palampuli)
2. சேங்கொட்டை (Sengrangkottai)
3. முருக்கிலை பொடி(Murukilli podi)
4. கறியுப்பு(Kariuppu)
5. வெடியுப்பு(Vediuppu)
6. வெங்காரம்(Vengaram)

Palam Puli

Botanical Name : Tamarindus indica

English Name : Tamarind

Family : Caesalpinioideae

Part Used : Fruit

Suvai : Pulipu

Thanmai : Veppam

Pirivu : Karppu

தீதில் பழம்புளியைச் சேர்க்கத் திரிதோடம்
வாதமொடு சூலைகபம் மாறுங்காண்-ஓதுசுரஞ்
சர்த்தியென்ற தோடமிவை சாந்தமாங் கண்ணோய்போம்
பித்தமென்ற பேரொழியும் பேசு.

-அகத்தியர் குணவாகடம்

Action : Mukkutram, Vazhinoi, Soolai, Iyyaperukku, Kannoi, Pitham.

Sengkottai

Botanical Name : Semecarpus anacardium

English Name : Marking Nut, Oriental cashew

Family : Anacardiaceae

Part Used : Nut

Suvai : Kaippu,Verruvrupu

Thanmai : Veppam

Pirivu : Karppu

Chemical Constituents :

Flavonoids- Semecarpetin, nallaflavone, galluflavanone, tetrahydroarmentoflavone.

Fixed oil- stearic,palmitic, linoleic oleic and arachidic acids.

It has antineoplastic activity, immunomodulatory activity and hypocholesterolaemic activity

Murukilai podi

Botanical Name : Erythrina variegata

English Name : Indian coral tree

Family : Fabaceae

Part Used : Leaf

Suvai : Kaippu,Karppu

Thanmai : Veppam

Pirivu : Karppu

Action : Diuretic, Laxative, Emmenagogue

Kariuppu

Botanical Name :

English Name : Sodium chloride,Common salt

Suvai : Karipu

" மந்தம் பொருமலறும் வாயுவும்போம்தீபனமாம்
தொந்தித்த ஜயந் தொடருமோ- சந்ததமும்
அக்கினியின் புஷ்டி அடருங் கறியுப்பால்
சிக்குகின்ற நீரிறங்குஞ் செப்பு"

(பொ-ள்) கறியுப்பால் மந்தம்,வயிற்றுப் பொருமல்,வாயு,கபம் நீங்கும்.நீரடைப்பு தீரும்.பசியும் சமாக்கினியும் அதிகப்படும்

Vediuppu

English Name : Potassium Nitrate

“ மல்லாரு மட்டகுன்ம மாதருத ரத்தக்கட்டி
கல்லா மதைப்புநீர்க் கட்டருக-லெல்லாமே
கம்பிகம்பி யென்றுங் கருவுண்டா மங்கிநின்ற
கம்பிகம்பி யென்றுரைக்குங் கால்”

(பொ-ள்) மூத்திரகிரிச்சரம்,நீர்ச்சுருக்கு,எண்வித குன்மம், கருப்பாயாசக் கட்டி,சோபை தீரும்.

Vengaram

English Name : Borax

Suvai : Inippu,Thuvarppu

Verium :Veppam

“ சொறிபுடையெண் குன்மநமை சோரி யாசம்
பறிகிரகணி கல்லூனம் பன்னோய்-நெறியைத்
தடங்கணங்க பங்கிருமி சர்ப்பவிடஞ் சந்நி
யிடங்கணங்க லக்கிற்போ மெண்”

(பொ-ள்) வெங்காரத்தினால், மூத்திரகிரிச்சரம், அஸ்மாரி, தவளைச்சொறி, எண்வகை குன்மம், இரத்த மூலம், ஒழுக்குக் கிரகணி முதலிய நோய்கள் தீரும்.

BIOCHEMICAL ANALYSIS OF SINDHU VALLADHI

PREPARATION OF THE EXTRACT

5 grams of the drug is weighed accurately and placed in a 250 ml clean beaker. Then 50 ml of distilled water is added and dissolved well. Then it is boiled well for about 10 minutes. It is cooled and filtered in a 100 ml volumetric flask and then it is made up to 100 ml with distilled water. This fluid is taken for analysis.

QUALITATIVE ANALYSIS

S. NO	EXPERIMENT	OBSERVATION	INFERENCE
1	**TEST FOR CALCIUM** 2 ml of the above extract is taken in a clean test tube. To this add 2 ml of 4% ammonium oxalate solution	A white precipitate is formed	Absence of calcium
2	**TEST FOR SULPHATE** 2 ml of the above extract is added to 5% barium chloride solution	No white precipitate is formed	Absence of sulphate
3	**TEST FOR CHLORIDE** The extract is treated with silver nitrate solution	A white precipitate is formed	Presence of chloride

4	**TEST FOR CARBONATE** The substance is treated with concentrated HCL	No brisk effervescence is formed	Absence of carbonate
5	**TEST FOR STARCH** The extract is added with weak iodine solution	No blue color is formed	Absence of starch
6	**TEST FOR FERRIC IRON** The extract is acidified with glacial acetic acid and add potassium ferrocyanide	No blue colur is formed	Absence of ferric iron
7	**TEST FOR FERROUS IRON** The extract is treated with concentrated nitric acid and ammonium thio cyanate solution	Blood red colour is formed	Indicates presence of ferrous iron
8	**TEST FOR PHOSPHATE** The extract is treated with ammonium molybdate and concentrated nitric acid	No yellow precipitate is formed	Absence of phosphate

9	**TEST FOR ALBUMIN** The extract is treated with Esbatch's reagent	No yellow precipitate is formed	Absence of albumin
10	**TEST FOR TANNIC ACID** The extract is treated with ferric chloride	No blue black precipitate is formed	Absence of tannic acid
11	**TEST FOR UNSATURATION** Potassium permanganate solution is added to the extract	It gets decolourised	Indicates the presence of unsaturated compound
12	**TEST FOR REDUCING SUGAR** 5 ml of benedict's qualitative solution is taken in a test tube and allowed to boil for 2 minutes and add 8- 10 drops of the extract and again boil for 2 minutes	Colour change occurs	Indicates the presence of reducing sugar
13	**TEST FOR AMINO ACID**	No violet colour is	Absence of

	One or two drops of the extract is placed on a filter paper and dried well. After drying 1% Ninhydrin is sprayed over the same and dried well	formed	amino acid
14	**TEST FOR ZINC** The extract is treated with potassium ferrocyanide	No white precipitate is formed	Absence of zinc

ANTI-ANDROGENIC ACTIVITIES OF SINDHU VALLADHI

INTRODUCTION

Nowadays, androgen-mediated diseases such as prostate cancer, hirsutism, acne, androgenic alopecia and benign prostatic hyperplasia (BPH) have become serious problems(Barrtsch et al., 2002). Above all, BPH is one of the most common ailments seen in older men; 40% of men 50–60 years of age and 90% of men 80–90 years of age have been diagnosed with BPH. The principal prostatic androgen is dihydrotestosterone (DHT), which is formed by the steroidenzyme 5α-reductase from its substrate testosterone (Russell and Wilson, 1994). 5α-Reductase is a membrane-bound NADPH-dependent enzyme that catalyzes the reduction of testosterone to the more potent androgen DHT. The effect of DHT is purely androgenic in that, unlike T, it cannot be transformed into estrogen. Since the weight of the seminal vesicles depends on the 5α-reduced androgens, it is important to regulate the level of the DHT. Therefore, 5α-reductase inhibitory ingredients should be useful in the treatment of BPH (Barrtsch et al., 2000).

Two isoforms of 5α-reductase (types 1 and 2) have been cloned, expressed and characterized; they display different tissue expression patterns, enzyme kinetic parameters and chromosomal localization (Jenkins et al., 1991). These two 5α-reductase isozymes have been identified in both rats and humans, and both isozymes are over-expressed in BPH tissue(Iehle et al., 1999). Coded by two different genes (Andersson and Russell, 1990), they display a maximal activity at

different pH (6.5 for type 1 and 4.5 for type 2); overall, they have different biochemical characteristics. In rats, the type 1isozyme predominates in tissues such as liver, kidney, brain, lung, and skin but also exists in the prostate, whereas the type 2 isozyme is more abundant in genital tissues such as the prostate. A number of synthesized 5α-reductase inhibitors with steroidal moiety have been reported.

However, it should be noted that these inhibitors have the potential to cause adverse effects such as those reported for finasteride (Uygur et al., 1998) i.e., gynecomastia, impairment of muscle growth, and severe myopathy due to their structural similarity to steroidal hormones. Hence, the emergence of therapeutic materials having fewer side effects preferably, natural products would be highly desirable if their safety could be guaranteed.Although there is no clear evidence that patients who develop BPH will ultimately have prostate cancer, androgens do influence the development of prostate cancer (Rosset al., 1992; Giovannucci et al., 1997; Hsing et al., 2002). The use of finasteride, the 5α-reductase inhibitor, can lower the androgen levels in the prostate and reduce the risk of prostate cancer (Thompson etal.,2003). 5α-reductase inhibition and suppression of androgen-induced prostate cell growth by sindhu valladhi have never been reported. In this paper, we have demonstrated the in vitro and in vivo anti-androgenic activity of sindhu valladhi for the first time.

Materials and methods

This research was conducted in accordance with institutional animal ethical committee for laboratory animal use and care as found in, for example, CPCSEA guidelines.

Materials

Chemicals were obtained from Sigma Aldrich Co. Ltd. (USA).Organic solvents were purchased from S.D.Fine Pure Chemical Industries Co. (Mumbai). Testosterone was obtained from PerkinElmer Co. Ltd. (USA).Sprague–Dawley (SD) rats were obtained from kings instute,Chennai.

Preparation of rat microsomes

Rat liver and prostate microsomes from female (7 weeks age) and male (13 weeks age) SD rats, respectively, were prepared by a method previously reported by Shimizu et al.(2000) with some modifications. Two mature SD female rats were killed. Their livers were removed and minced tissue was homogenized in four tissue volumes of medium A (0.32M sucrose, 1mM dithiothreitol, and 20mM sodium phosphate,pH 6.5). Also, three mature male SD rats were killed. Their prostates were removed and minced tissues were homogenized in four tissue volumes of medium A.

The homogenate was then centrifuged at 10,000×g for 10 min. The resulting supernatant from the centrifugations was further centrifuged at 15,000×g for 1 h twice. The washed microsomes were suspended in one pellet volume of medium A, and the dispersion of microsomes was achieved using a syringe with 18G, 23G, and 26G needles in succession. The microsome suspension was stored at −20 ◦C just before use.

Measurement of 5α-reductase inhibitory activity

A complete reaction mixture included 1mM dithiothreitol, 20mMphosphate buffer (pH 6.5 for 5α-R1 or pH 5.0 for 5α-R2), 1.9 nCi [4-14C] testosterone, 150µM testosterone,167 µM NADPH, and the enzyme pæparation (1.54 mg of protein) in a final volume of 0.3 ml. The concentration of testosterone contributed by [4-14C] testosterone was negligible.Sindhu valladhi at room temperature,were added to the solution at a concentration of 200 ppm. The incubation of these samples was carried out for 10 min at 37 ◦C and was started by the addition of 10 µl microsomes to the pre-heated reaction solution in a tube. After l0 min,the incubation was terminated by adding 10 µl of 3M NaOH. To extract the metabolites, lml of diethyl ether was added, and the tubes were capped and shaken. The organic phase was applied to a silica plate (Kieselgel 60 F254). The plate was developed in ethyl acetate-*n*-hexane (7:3) at room temperature. The radioactivity profile was determined with an imaging analyzer (FLA-5000 RF, Fuji Film Co. Ltd.,Tokyo, Japan). The 5α-reductase activity was calculated from the percentage conversion of [4-14C] testosterone to [4-14C] dihydrotestosterone.

Growth suppression of the rat prostate by sindhu valladhi

The assay for growth suppression of the rat prostate was performed as described by Fukuta et al. (1999). The testes of SD rats were removed at 4 weeks of age under light anesthesia with pentobarbital. After 4 days, testosterone (100 µg/body) was injected s.c. into the rats once daily for 7 days. Sindhu valladhi were

orally administered at concentrations of 50 mg/kg of body weight once daily for 7 days. Flutamide (10 mg/kg body weight) was used as the positive control and was suspended in 0.5% methylcellulose and orally administered once daily for 7 days. After 7 days, rats were deprived of food and water for 18 h and sacrificed by pentobarbital. Then, their prostates were removed and their weights determined.

Statistics

Results were expressed as mean±S.E.M. Statistical significance was determined by ONE WAY ANOVA followed by Newmann keul's multiple range tests.

Results

5α-Reductase inhibitory activity of the extract of sindhu valladhi

The microsome portion prepared from rat liver was used as the type 1 isozyme source because it was more easily available than that of the prostate. In this screening assay, the sindhu valladhi showed the highest inhibitory activity . The extract of sindhu valladhi showed 5α-reductase inhibitory activity at dose dependently (IC50 = 93 ppm). It should be noted that finasteride, which is known as a potent steroidal inhibitor, showed an IC50 of 0.73 µM in our assay system. Generally, 5α-reductase type 2 is thought to play a major role in the prostate because it is predominantly expressed in this tissue. However, some evidence shows that, in the human prostate, 5α-reductase type 1 is expressed mainly in the epithelial cells, whereas 5α-reductase type 2 is localized mainly in the stromal

compartment (Thigpen et al., 1993;Bonkhoff et al., 1996). Because both isozymes are overexpressed in BPH tissue, we examined the inhibitory effect of the extract of sindhu valladhi against both isozymes prepared from the prostate.. It is clear from the results that extracts of sindhu valladhi can inhibit both the types l and 2 isozymes of the rat.

Growth suppression of the rat prostate with administration of sindhu valladhi

In this experiment, we used the anti-androgen receptor blockade flutamide not but 5α-reductase inhibitor such as finasteride as the positive control. It has been reported that the prostate size of animals treated with finasteride at 25 and 50 mg/kg/day significantly decreased, but flutamide-treated animals exhibited complete feminization of the genitalia at 24 mg/kg/day (Imperato-McGinley et al., 1992). Therefore we used a dose of l0 mg/kg/day of flutamide to inhibit the growth of the prostate. Four days after castration, the weights of the rat prostates were markedly reduced from 83.8±9.71 to 6.02±1.74 mg/100 g of body weight. The prostate weights recovered by s.c. injection of testosterone, but not completely.

In the rats that received testosterone only, the prostate weight was 39.72±10.76 mg/l00 g of the body weight. In the rats that received testosterone and simultaneous administration of sindhu valladhi , this increase was reduced: the prostate weights were 26.62±4.57 mg/l00 g of the body weight.Flutamide also limited the testerone-induced increase in prostate weights to 16.87±2.63 mg/l00 g of the body weight.

Growth suppression of rat prostate with administration of extracts of sindhu valladhi

In the rats that received testosterone, administratio of extracts of sindhu valladhi reduced the increased weight of the ventral prostate .. Interestingly,administration of extracts of sindhu valladhi at the concentration of 50 mg/kg showed higher suppression effects on the prostate.

Discussion and conclusions

Prostatic enlargement is dependent on tissue androgen, namely DHT, which is converted from testosterone by steroid 5α-reductase. In this study, we investigated the effects of sindhu valladhi on steroid 5α-reductase activity and on the testosterone-induced growth of the prostate in castrated rats. The extracts of sindhu valladhi inhibited both types of 5α-reductase, a so-called dual inhibition that might be advantageous for the therapy of BPH, since it has been shown that the dual inhibitor dutasteride is more powerful in reducing the DHT plasma concentration than selective type 1 or type 2 inhibitors (Graul et al., 1999). In addition, the treatment of sindhu valladhi itself or its extract significantly inhibited the testerone-induced growth of the ventral prostate in castrated rats. These results suggest that the suppression effect of prostatic growth by sindhu valladhi might come in part from its ability to act as an inhibitor of 5α-reductase.

In the last few years, the use of herbal therapies in alternative medicine has been increasing, and although the number of cancer patients using herbal dietary supplements is not exactly known, there is evidence of the increasing use of

dietary supplements in cancer treatment (Eisenberg et al., 1998). Considering our results, these effects might be related not only to the anti-cancer effects of sindhu valladhi but also to its anti-androgen effects.In this study, we found a new fact to the biological activity of sindhu valladhi, anti-androgenic activities on in vitro 5α-reductase and in vivo growth suppression of the rat prostate. In the future, herbal therapies will become more widely used for treatment of diseases. The anti-androgenic activity of sindhu valladhi is an important biological activity for use with BHP patients.

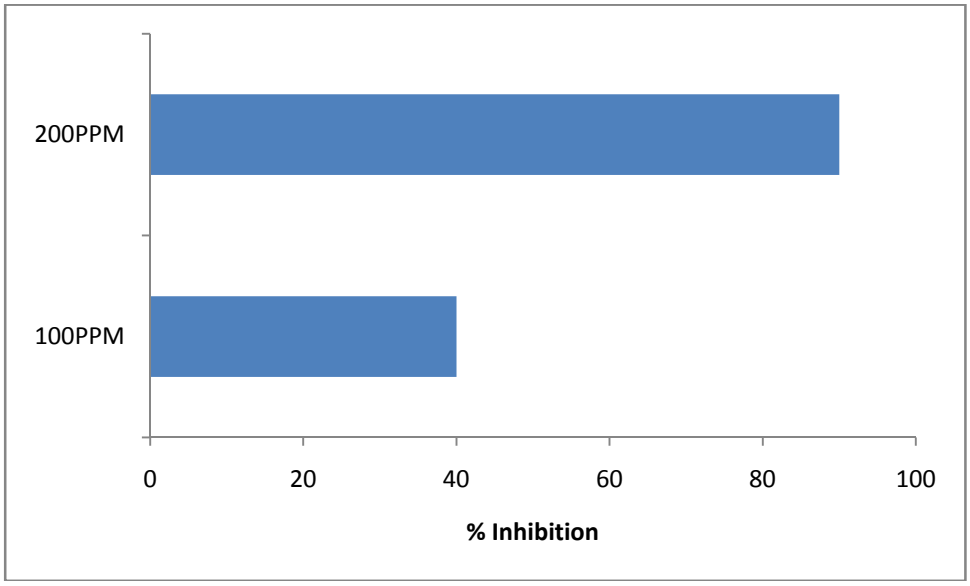

Fig. 1. Inhibitory effects of sindhuvalladhi on 5α-reductase activities. Each column represents the mean±S.D.,*n* = 3. Sample concentration is 100 and 200 ppm.

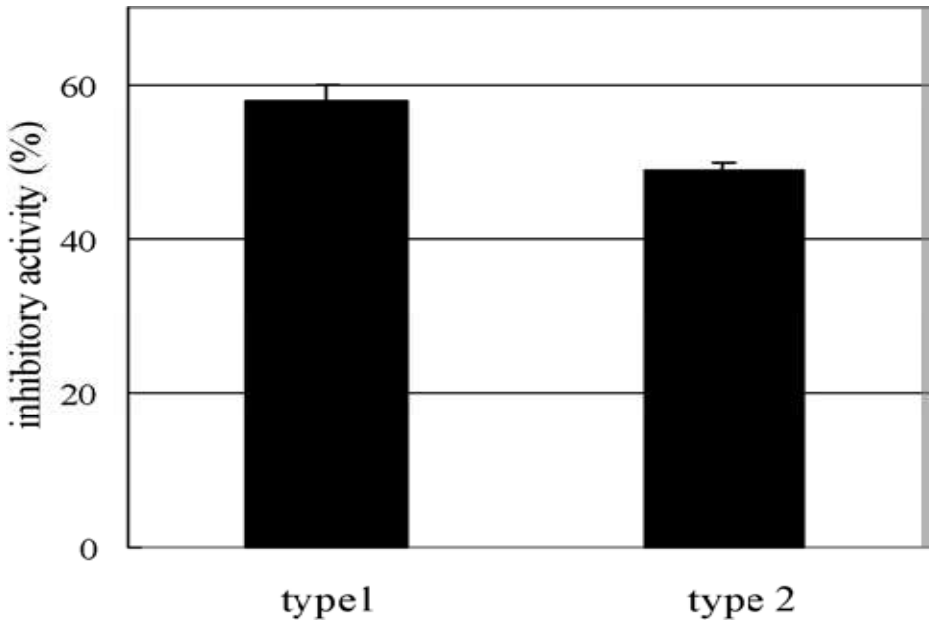

Fig. 2. The inhibitory activity of sindhuvalladhi on types 1 and 2 5 α -reductase. Each column represents the mean±S.D., *n*=3.Sample concentration is 200 ppm.

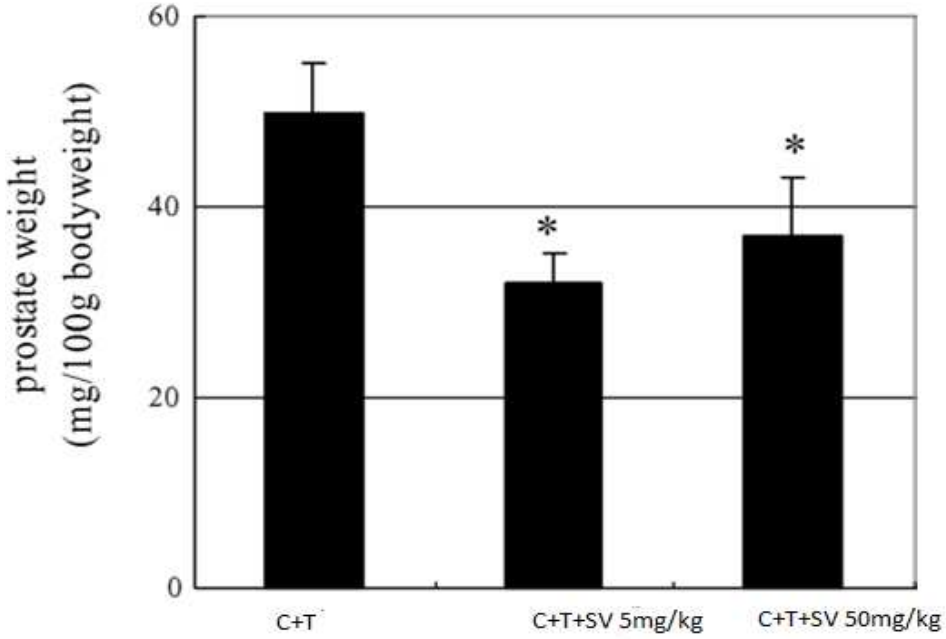

Fig. 3. Effects of sindhuvalladhi on testosteroneinduced

regrowth of the castrated rat prostrate. Each column represents the mean±S.E.M., $n = 6$. C: castrated rat, T: testosterone, SV: $^*p < 0.01$ against C + T.

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GOVERNMENT SIDDHA MEDICAL COLLEGE & HOSPITAL,

PALAYAMKOTTAI, TIRUNELVELI DISTRICT

DEPARTMENT OF POTHU MARUTHUVAM

PRECLINICAL AND PHASE II RANDOMIZED CLINICAL TRAIL ON VATHA VATHTHI KIRICHANAM(BENIGN PROSTATE HYPERPLASIA) WITH SINDHU VALLADHI

FORM-I

(SCREENING AND SELECTION PROFORMA)

1.Name_____ 2.Age_____ 3.gender_____ 4.Phone no _____

5. OP No. _____ 6. IP No. _____ 7. S.No. ._____

INCLUSION CRITERIA:

- Age : 50 & above
- Sex : male
- Patient having symtoms of frequency,urency,incomplete emptying,weak steam,nocturia,
- Patients who are willing to undergo USG investigation and give blood for laboratory investigation.
- Patient willing to sign the informed consent stating that he will consciously stick to the treatment during 20 - 30 days but can opt out of the trial of own conscious discretion.

EXCLUSION CRITERIA:

- Patient having ca prostate
- Patient with cardiovascular disorder
- Stricture urethra
- Liver disease
- Patient indicated for surgery
- Patient with any other serious illness
- Patient on those drugs which were likely to affect bladder function

DATE :

STATION : **SIGNATURE OF HOD**

SIGNATURE OF INVESTIGATOR **SIGNATURE OF LECTURER**

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PALAYAMKOTTAI, TIRUNELVELI DISTRICT

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PRECLINICAL AND PHASE II RANDOMIZED CLINICAL TRAIL ON VATHA VATHTHI KIRICHANAM(BENIGN PROSTATE HYPERPLASIA) WITH SINDHU VALLADHI.

FORM l A

HISTORY PROFORMA ON ENROLLMENT

1. Serial No of the case: _____ 2. OP/IP No:_____

3. Name: _____ 4. Gender: Male ☐ Female ☐

5. Age (years): _____ DOB ☐☐ ☐☐ ☐☐☐☐
Date Month Year

6.Address: ----------

7.A.Occupation: ---------- B. Nature of work----------

8. Educational Status: A) Illiterate ☐ B)Literate ☐

9.Height:---------- cms 10.Weight:----------kg

11. Complaints and Duration:

_____

_____

12. Past History

hypertension _____

diabetes mellitus _____

asthma _____

pt _____

HABITS

A) Smoking : 1. Yes ☐ duration _____ years; Number - _____ 2. No ☐

B) Alcoholism:1. Yes ☐ duration _____ years; Quantity- ____ ml 2. No ☐

C) Tobacco chewing: 1. Yes ☐ duration _____ years 2.No ☐

D) Betel chewing : 1. Yes ☐ duration _____ years 2.No ☐

13.Dietary style: A.Pure vegetarian ☐ B.Non-vegetarian ☐ C. Mixed diet ☐

14. Drug history: Had the patient been treated before with allopathy drug?

A) Yes ☐ 2) No ☐

15 Marital status **:** 1.Married ☐ 2.Unmarried ☐

16. Family history :

Whether this problem runs in family? 1. Yes ☐ 2.No ☐

If yes, mention the relationship of affected person(s) - _____

18. Bowel habits & micturition: Normal ☐

History of habitual constipation 1.Yes ☐ 2.No ☐

History of frequent diarrhoea 1.Yes ☐ 2.No ☐

History of frequent dysuria 1.Yes ☐ 2.No ☐

19. Psychological state: Normal ☐ Anxiety ☐ Depression ☐

Date :

Station :

Signature of the Investigator :

Signature of the Lecturer : **Signature of the HOD**

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PRECLINICAL AND PHASE II RANDOMIZED CLINICAL TRAIL ON VATHA VATHTHI KIRICHANAM(BENIGN PROSTATE HYPERPLASIA) WITH SINDHU VALLADHI

FORM II & II-A

CLINICAL ASSESSMENT ON ENROLLMENT AND ON VISITS

1. S.NO: _____ 2. OP/IP NO : _____

3. Name : _____ 4. Gender : _____

5. Date of assessment : _____

SIDDHA SYSTEM OF EXAMINATION

1**. ENVAGAI THERVU: [EIGHT-FOLD EXAMINATION]**

I. NAADI: [PULSE PERCEPTION]

	0^{st}Day	07^{th}Day	14^{th} Day	21^{st} Day	28^{th} Day	30^{th} Day
Vali						
Azhal						
Iyyam						
Vali Azhal						
Azhal vali						
Iyya vali						
Vali Iyyam						
Azhal Iyyam						
Iyya Azhal						

II. NAA:[TONGUE]

	0th Day	07th Day	14th Day	21st Day	28th Day	30th Day
Colour	Dark/ Yellow/ Red/ Pale	Dark/ Yellow/ Red/ Pale	Dark/ Yellow/ Red/ Pale	Dark/ Yellow/ Red/ Pale	Dark/ Yellow/ Red/ Pale	Dark/ Yellow/ Red/ Pale
Taste	Sweet/ Bitter/ Sour/ Pungent/ None	Sweet/ Bitter/ Sour/ Pungent/ None	Sweet/ Bitter/ Sour/ Pungent/ None	Sweet/ Bitter/ Sour/ Pungent/ None	Sweet/ Bitter/ Sour/ Pungent/ None	Sweet/ Bitter/ Sour/ Pungent/ None
Coating	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Fissure	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Saliva	Normal/ Increased/ Decreased	Normal/ Increased/ Decreased	Normal/ Increased/ Decreased	Normal/ Increased/ Decreased	Normal/ Increased/ Decreased	Normal/ Increased/ Decreased
Dryness	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Glossitis	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Baldness	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent

III.NIRAM: [COMPLEXION]

0^{th} Day	07th day	14th Day	21st Day	28th Day	30th day
Dark/ Yellow/ tinted/ Pale	Dark/ Yellow/ tinted/ Pale	Dark/ Yellow/ tinted/ Pale	Dark/ Yellow/ tinted / Pale	Dark/ Yellow/ tinted/ Pale	Dark/ Yellow/ tinted/ Pale

IV.MOZHI: [VOICE]

0^{th} Day	07th day	14th Day	21st Day	28th Day	30th day
Medium/ High/ Low / Pitched	Medium/ High/ Low/ Pitched	Medium/ High/ Low/ pitched	Medium/ High/ Low/ pitched	Medium/ High/ Low/ pitched	Medium/ High/ Low/ pitched

V.VIZHI: [EYES] (Lower palpabrel conjunctiva)

0^{th} Day	07th day	14th Day	21st Day	28th Day	30th day
Dark/ Yellow/ Red/ Pale	Dark/ Yellow/ Red/ Pale	Dark/ Yellow/ Red/ Pale	Dark/ Yellow/ Red/ Pale	Dark/ Yellow/ Red/ Pale	Dark/ Yellow/ Red/ Pale

VI. MALAM; [BOWEL HABITS / STOOLS]

	0^{th} Day	07th Day	14th Day	21stDay	28th Day	30th day
Colour	Dark/ Yellow/ Red/ Pale	Dark/ Yellow/ Red/ Pale	Dark/ Yellow/ Red/ Pale	Dark/ Yellow/ Red/ Pale	Dark/ Yellow/ Red/ Pale	Dark/ Yellow/ Red/ Pale
Consistency	Solid/ Semisolid/ Watery	Solid/ Semisolid/ Watery	Solid/ Semisolid/ Watery	Solid/ Semisolid/ Watery	Solid/ Semisolid/ Watery	Solid/ Semisolid/ Watery
Stool bulk	Normal/ Reduced	Normal/ Reduced	Normal/ Reduced	Normal/ Reduced	Normal/ Reduced	Normal/ Reduced
Constipation	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Diarrhoea	Present/ Absent	Present/ Absent	Present/ Absent	Present/		

ERROR: syntaxerror
OFFENDING COMMAND: --nostringval--

STACK:

LABORATORY INVESTIGATION

S.No	IP. NO	TC		DC						ESR				Bl.Sugar		Bl.Urea	
				N		L		E		BT		AT					
		BT	AT	BT	AT	BT	AT	BT	AT	1/2 hr	1 hr	1/2 hr	1 hr	BT	AT	BT	AT
1	2251	8100	9200	63	63	35	34	2	3	5	12	8	16	121	100	23	28
2	2263	8200	8100	63	65	30	32	5	3	24	35	3	6	110	100	26	24
3	2359	7500	8100	64	66	37	32	3	2	40	80	8	15	118	100	42	28
4	2501	9200	8500	64	64	32	33	4	3	18	40	6	12	115	95	29	26
5	2767	8300	8150	66	68	28	30	3	2	20	42	5	10	110	100	32	30
6	2770	10000	9800	60	64	30	33	4	3	20	30	4	10	100	100	32	25
7	2780	7900	8100	68	71	25	27	4	2	10	22	5	12	95	100	23	20
8	2831	7000	9100	59	66	40	33	1	1	14	30	5	10	127	110	36	34
9	2876	8400	9150	61	63	37	34	2	3	5	12	7	15	92	100	40	36
10	2951	7600	7000	57	57	38	38	3	5	22	44	11	22	144	73	39	29
11	3033	9100	8600	64	62	35	33	4	3	11	22	3	7	105	100	30	32
12	3116	9900	10100	57	62	28	33	2	2	5	15	5	11	85	95	33	28
13	3141	8000	8400	62	70	28	28	1	1	30	55	3	6	110	110	61	39
14	3167	8200	8600	63	65	30	32	3	2	22	44	5	12	80	90	30	30
15	3222	8300	8700	62	64	33	34	4	2	10	22	3	6	100	100	40	38
16	3223	9500	9900	67	70	25	27	3	2	5	11	3	6	95	95	32	28
17	3428	8500	9100	60	62	33	35	6	4	20	40	4	10	110	120	22	21
18	3563	8000	8300	68	68	28	30	4	2	10	22	6	12	100	100	35	34
19	3613	9000	9450	64	67	28	30	3	1	15	25	8	16	120	110	30	30
20	3624	8300	8700	65	66	30	32	2	1	25	55	5	10	110	110	35	30

LABORATORY INVESTIGATION

S.No	OP. NO	TC		DC						ESR				Bl.Sugar		Bl.Urea	
				N		L		E		BT		AT					
		BT	AT	BT	AT	BT	AT	BT	AT	1/2 hr	1 hr	1/2 hr	1 hr	BT	AT	BT	AT
1	48765	8500	8700	60	62	37	36	3	2	18	40	4	8	124	106	36	34
2	50619	7700	7800	59	61	37	38	1	1	12	16	8	4	105	105	35	32
3	50740	7500	7600	52	53	46	46	2	1	11	22	4	8	86	85	23	22
4	52047	9100	9800	57	57	41	40	2	1	2	4	2	4	121	105	23	20
5	52597	9500	9200	64	63	34	34	2	1	1	2	2	3	284	180	35	30
6	53613	8000	8500	58	51	40	45	3	2	2	4	1	2	105	101	25	21
7	54405	8000	8500	65	66	33	33	2	1	10	30	5	15	117	122	26	26
8	55105	6400	8700	50	60	40	38	2	2	4	8	1	2	92	95	20	24
9	55308	8500	9000	66	68	27	29	3	1	4	8	1	2	80	85	25	13
10	61580	8700	8600	65	65	32	34	1	1	3	6	3	6	110	98	17	21
11	64331	8100	9400	63	57	33	41	2	1	1	2	1	2	96	100	26	15
12	66941	7800	7900	66	66	30	32	1	2	3	6	2	4	99	102	22	23
13	68139	8000	8600	67	67	29	30	2	2	6	12	2	4	110	130	34	24
14	71656	7900	8100	65	65	32	32	3	1	9	11	8	16	102	104	14	20
15	71657	8500	8900	65	56	32	36	1	2	6	13	4	8	53	75	37	24
16	72137	7900	7500	60	61	34	33	2	2	5	11	2	4	169	121	26	24
17	73906	9000	9500	62	64	32	34	1	2	8	16	4	8	169	117	26	26
18	76409	7900	8400	65	63	36	30	1	1	2	5	2	4	63	103	27	19
19	79422	7900	8100	65	67	30	32	3	1	15	25	5	10	76	86	22	22
20	82453	9900	9500	54	57	40	42	2	1	11	22	5	10	98	90	30	27

LABORATORY INVESTIGATION

S.No	IP NO	Before treatment						After treatment					
				Deposits						Deposits			
		Albumin	Sugar	Pus Cells	Epi Cells	RBC	Cast/Crystal	Albumin	Sugar	Pus Cells	Epi Cells	RBC	Cast/Crystal
1	2251	Nil	Nil	NAD	NAD	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
2	2263	Nil	Nil	1-2	-	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
3	2359	Nil	Nil	NAD	few	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
4	2501	Nil	Nil	1-3	NAD	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
5	2767	Nil	Nil	-	few	NAD	NAD	Nil	Nil	-	NAD	NAD	NAD
6	2770	Nil	Nil	NAD	NAD	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
7	2780	Nil	Nil	3-5	NAD	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
8	2831	Nil	Nil	NAD	NAD	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
9	2876	Nil	Nil	2-3	NAD	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
10	2951	Nil	Nil	NAD	NAD	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
11	3033	Nil	Nil	NAD	NAD	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
12	3116	Nil	Nil	2-3	few	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
13	3141	Nil	Nil	NAD	NAD	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
14	3167	Nil	Nil	1-2	NAD	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
15	3222	Nil	Nil	1-2	NAD	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
16	3223	Nil	Nil	NAD	NAD	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
17	3428	Nil	Nil	NAD	NAD	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
18	3563	Nil	Nil	NAD	NAD	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
19	3613	Nil	Nil	1-2	NAD	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
20	3624	Nil	Nil	NAD	NAD	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD

LABORATORY INVESTIGATION

S.No	OP. NO	Before treatment						After treatment					
				Deposits						Deposits			
		Albumin	Sugar	Pus Cells	Epi Cells	RBC	Cast/Crystal	Albumin	Sugar	Pus Cells	Epi Cells	RBC	Cast/Crystal
1	48765	Nil	Nil	3-4	NAD	NAD	NAD	Nil	Nil	1-2	NAD	NAD	NAD
2	50619	Nil	Nil	1-2	NAD	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
3	50740	Nil	Nil	NAD	NAD	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
4	52047	Nil	Nil	NAD	NAD	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
5	52597	Nil	Nil	1-2	NAD	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
6	53613	Nil	Nil	2-3	NAD	NAD	NAD	Nil	Nil	1-2	NAD	NAD	NAD
7	54405	Nil	Nil	NAD	NAD	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
8	55105	Nil	Nil	2-3	NAD	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
9	55308	Nil	Nil	NAD	NAD	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
10	61580	Nil	Nil	2-3	1-2	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
11	64331	Trace	Nil	1-3	1-3	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
12	66941	Nil	Nil	NAD	NAD	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
13	68139	Nil	Nil	NAD	NAD	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
14	71656	Nil	Nil	1-2	NAD	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
15	71657	Nil	Nil	NAD	1-2	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
16	72137	Nil	Nil	1-2	NAD	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
17	73906	Nil	Nil	NAD	NAD	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
18	76409	Nil	Nil	3-5	NAD	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
19	79422	Nil	Nil	1-2	0-1	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD
20	82453	Nil	Nil	1-2	NAD	NAD	NAD	Nil	Nil	NAD	NAD	NAD	NAD

LABORATORY INVESTIGATION								
S.No	IP.No	Name	Hb gm%		Serum Cholesterol mg%		Serum Creatinine mg %	
			BT	AT	BT	AT	BT	AT
1	2251	Muthukumaraswamy	11	11.5	180	170	0.8	0.7
2	2263	Ramdoss	10.2	11	169	175	1	1.1
3	2359	Subbiah pillai	9	11	214	180	1.2	1
4	2501	Perumal pillai	12	11.2	209	180	0.7	0.7
5	2767	Naiynar	11.8	12.1	175	165	0.8	0.7
6	2770	Karuppaswamy	11.2	12	162	164	1.2	1.1
7	2780	Lakshmanan	10	11.8	182	180	0.8	0.9
8	2831	Lakshmanan	11	11.8	184	185	0.7	0.7
9	2876	Thatchana moorthy	11	12	118	124	0.7	0.8
10	2951	Sangiya	11.2	11.5	197	126	0.9	0.8
11	3033	Ganapathy	12	13	196	180	1.1	0.9
12	3116	Mangani	13	13	170	180	0.8	0.7
13	3141	Mayandi	10.2	11	175	188	0.9	0.7
14	3167	Mothilal	12	12.1	160	170	0.9	0.8
15	3222	Devanayagam	10.2	11.2	160	165	0.8	0.8
16	3223	Ponalagu muthu	10	11	180	170	1.1	0.9
17	3428	kasi	10.6	11	190	185	0.9	0.9
18	3563	Balaguru	9.6	10.8	180	170	0.8	0.8
19	3613	Ponniah	9.8	10.5	160	180	1	0.9
20	3624	Veerapandi	10.2	11	175	165	0.8	0.9

LABORATORY INVESTIGATION								
S.No	OP.No	Name	Hb gm%		Serum Cholesterol mg%		Serum Creatinine mg %	
			BT	AT	BT	AT	0.9	0.8
1	48765	Sudalimuthu	11	12	196	180	0.9	0.9
2	50619	Subramanian	10.2	11	165	160	0.8	0.8
3	50740	Subramanian	12.5	13	196	187	0.7	0.7
4	52047	Vellaswamy	12.5	12	211	180	0.8	0.7
5	52597	Jeyasingh	11	12	181	170	0.9	0.8
6	53613	Ulaganathan	11.5	12.5	183	165	0.9	0.9
7	54405	Chelladurai	11	11.5	176	166	0.8	0.8
8	55105	Chelliah	11	11	156	156	0.8	0.9
9	55308	Muthiah	11	11.5	168	150	0.9	0.8
10	61580	Murugan	10.5	11	157	165	0.9	0.8
11	64331	Petchimuthu	11	12	145	150	1.1	0.9
12	66941	Mukkiah	12.5	13	157	153	1	0.9
13	68139	Vincent selvaraj	12.5	13	163	150	1.2	0.8
14	71656	Jeyaraj	11.2	12	180	180	0.9	0.8
15	71657	Selvaraj	13.6	13	154	148	1.3	1.2
16	72137	Nallakannu	11.5	12	156	145	0.8	0.8
17	73906	Kadarkariyandi	12	11	158	152	0.8	0.7
18	76409	Sethu Arumugam	12.5	13	143	140	0.9	0.8
19	79422	Chokalingam	13	13.5	229	220	0.8	0.8
20	82453	Natrajan	13.4	14	194	180	0.9	0.7

CASE SUMMARY

S.NO	IP NO	NAME	AGE	SEX	OCCUPATION	DOA	DOD	NO.OF.DAYS TREATED			RESULT
								IP	OP	TOTAL	
1	2251	Muthukumaraswamy	85	M	Retired Clerk	13.07.12	10.08.12	29	57	86	Good
2	2263	Ramdoss	77	M	Farmer	14.07.12	13.08.12	31	92	123	Good
3	2359	Subbiah pillai	85	M	Farmer	23.07.12	17.08.12	26	50	76	Fair
4	2501	Perumal pillai	65	M	Farmer	31.07.12	20.08.12	21	85	106	Good
5	2767	Naiynar	70	M	Driver	22.08.12	13.09.12	23	29	52	Good
6	2770	Karuppaswamy	60	M	Farmer	22.08.12	26.09.12	36	64	100	Good
7	2780	Lakshmanan	65	M	Coolie	22.08.12	13.09.12	23	36	59	Good
8	2831	Lakshmanan	72	M	Coolie	27.08.12	17.09.12	22	29	51	Good
9	2876	Thatchana moorthy	75	M	Farmer	31.08.12	23.09.12	24	71	95	Good
10	2951	Sangiya	70	M	Tailor	06.09.12	02.10.12	27	43	70	Good
11	3033	Ganapathy	60	M	Farmer	12.09.12	02.10.12	21	43	64	Good
12	3116	Mangani	81	M	Coolie	19.09.12	11.10.12	23	29	52	Good
13	3141	Mayandi	70	M	Coolie	21.09.12	18.10.12	28	29	57	Good
14	3167	Mothilal	73	M	Coolie	22.09.12	12.10.12	21	50	71	Good
15	3222	Devanayagam	75	M	Retired HM	25.09.12	19.10.12	25	43	68	Good
16	3223	Ponalagu muthu	66	M	Tailor	25.09.12	15.10.12	21	22	43	Good
17	3428	Kasi	70	M	Farmer	04.10.12	23.10.12	20	7	27	Good
18	3563	Balaguru	81	M	Driver	13.10.12	02.11.12	21	29	50	Good
19	3613	Ponniah	77	M	Retired	18.10.12	07.11.12	21	29	50	Good
20	3624	Veerapandi	72	M	Farmer	19.10.12	07.11.12	20	29	49	Good

CASE SUMMARY

S.NO	OP. NO	NAME	AGE	SEX	OCCUPATION	DOA	DOD	TREATED DAYS	RESULT
1	48765	Sudalimuthu	66	M	Retired Person	29.06.12	21.09.12	85	Good
2	50619	Subramanian	68	M	Farmer	05.07.12	20.09.12	78	Good
3	50740	Subramanian	77	M	Farmer	06.07.12	28.09.12	85	Good
4	52047	Vellaswamy	63	M	Retired Person	10.07.12	28.08.12	50	Good
5	52597	Jeyasingh	75	M	Retired Person	12.07.12	27.09.12	78	Good
6	53613	Ulaganathan	68	M	Retired Person	16.07.12	01.10.12	78	Good
7	54405	Chelladurai	59	M	Tailor	08.07.12	29.11.12	145	Good
8	55105	Chelliah	70	M	Retired Person	21.07.12	01.12.12	134	Good
9	55308	Muthiah	75	M	Retired Person	21.07.12	24.11.12	127	Good
10	61580	Murugan	50	M	Farmer	11.08.12	21.11.12	103	Good
11	64331	Petchimuthu	77	M	Retired Person	21.08.12	06.11.12	78	Good
12	66941	Mukkiah	56	M	Tailor	30.08.12	29.11.12	92	Good
13	68139	Vincent selvaraj	62	M	Retired Person	03.09.12	12.11.12	71	Good
14	71656	Jeyaraj	67	M	Retired Person	13.09.12	29.11.12	79	Good
15	71657	Selvaraj	84	M	Farmer	13.09.12	29.11.12	79	Fair
16	72137	Nallakannu	65	M	Retired Person	14.09.12	30.11.12	79	Good
17	73906	Kadarkariyandi	63	M	Farmer	20.09.12	06.12.12	79	Fair
18	76409	Sethu Arumugam	61	M	Retired Person	27.09.12	06.12.12	72	Good
19	79422	Chokalingam	75	M	Retired Person	06.10.12	01.12.12	57	Good
20	82453	Natarajan	60	M	Retired Person	16.10.12	04.12.12	50	Good

CASE SUMMARY

L.N	IP.NO	NAME	PSA	Prostate						IPSS SCORE	
			Prostate Specific Antigen	Size (c.m)		Volume (cc)		Post Residual Urine Volume			
				BT	AT	BT	AT	BT	AT	BT	AT
1	2251	Muthukumaraswamy	1.1	4.8*4.5*3.4	4.2*4.0*3.1	25.00	25.00	80.00		8	3
2	2263	Ramdoss	1.8	3.8*4.1*4.5	3.8*3.8*4.3	40.00	35.00	28.00	24.00	10	3
3	2359	Subbiah pillai	3.9	3.50*4.46*4.0	3.1*4.0*3.8	28.00	25.00	210.00	108.00	35	28
4	2501	Perumal pillai	3.2	3.4*4.8*4.1	3.1*4.0*3.5	35.20	26.00	56.00	23.00	29	7
5	2767	Naiynar	2.8	4.0*4.0*4.1	3.7*4.0*3.2	35.00	30.00	20.00	15.00	14	4
6	2770	Karuppaswamy	2.7	4.15*3.50*4.23	3.8*3.5*4.0	32.16	27.00	32.00	21.00	22	3
7	2780	Lakshmanan	2.9	4.0*4.5*3.0	3.5*4.1*3.0	36.00	32.00	54.00	15.00	11	2
8	2831	Lakshmanan	1.5	3.8*4.2*3.7	3.2*4.0*3.3	38.00	32.00	40.00	18.00	14	3
9	2876	Thatchana moorthy	0.9	4.1*4.6*3.7	3.8*4.0*3.1	30.00	28.00	23.00	20.00	10	2
10	2951	Sangiya	1.1	4.55*4.39*4.32	4.1*4.0*4.1	45.22	39.07	60.00	25.00	25	3
11	3033	Ganapathy	0.5	3.9*3.8*3.9	3.5*3.9*3.1	32.00	26.00	45.00	24.00	19	3
12	3116	Mangani	1.9	3.9*3.2*4.2	3.5*3.0*4.1	36.00	31.00	18.00	18.00	15	2
13	3141	Mayandi	2.5	3.8*4.3*3.8	3.4*3.9*3.2	46.00	40.00	38.00	23.00	19	2
14	3167	Mothilal	3.1	3.8*4.3*3.9	3.4*4.0*3.7	38.00	32.00	75.00	24.00	14	3
15	3222	Devanayagam	3.6	3.3*3.8*3.2	3.2*3.7*3.2	21.88	21.00	80.00	20.00	26	5
16	3223	Ponalagu muthu	2.1	3.78*4.46*3.64	3.5*4.2*3.2	33.00	28.00	17.00		20	2
17	3428	Kasi	1.8	3.65*3.71*3.53	3.41*3.6*3.1	25.02	24.00	5.00		32	3
18	3563	Balaguru	3.5	4.18*3.72*3.82	3.98*3.4*3.5	31.14	29.00	36.00	18.00	23	4
19	3613	Ponniah	1.9	4.8*4.8*4.7	4.46*4.35*4.34	51.00	44.04	33.00	20.00	28	4
20	3624	Veerapandi	2.2	4.6*4.6*3.6	4.4*4.0*3.5	32.00	30.00			18	3

CASE SUMMARY

				Prostate						IPSS SCORE	
L.N	OP.NO	NAME	PSA	Size (c.m)		Volume (cc)		Post Residual			
			Prostate Specific Antigen	BT	AT	BT	AT	BT	AT	BT	AT
1	48765	Sudalimuthu	1.8	3.73*4.22*3.70	3.1*4.0*2.9	30.51	28	38	24	24	7
2	50619	Subramanian	2.4	4.5*4.0*4.5	3.5*4.0*3.8	47	35	19	18	27	4
3	50740	Subramanian	3.2	4.8*4.2*3.7	4.0*4.0*3.1	55	45	28	21	19	3
4	52047	Vellaswamy	3.7	4.0*4.6*4.2	3.5*4.1*3.6	41	35	36	21	9	1
5	52597	Jeyasingh	2.8	3.8*5.4*3.2	3.4*4.5*3.1	34	29	52	24	8	3
6	53613	Ulaganathan	1.2	4.1*4.7*4.4	3.8*3.8*4.1	46	42	40	25	13	2
7	54405	Chelladurai	2.8	4.41*3.63*4.54	3.8*3.5*4.1	38.09	32	40	23	14	3
8	55105	Chelliah	1.8	5.1*4.1*5.9	4.0*4.0*4.8	63.3	53	100	19	28	5
9	55308	Muthiah	2.2	4.6*5.1*5.1	4.3*4.1*3.9	65	57	35	22	28	5
10	61580	Murugan	1.9	5.0*3.7*3.5	4.5*3.5*3.5	33	28	28	18	21	4
11	64331	Petchimuthu	3.2	4.8*4.7*4.8	4.6*4.5*4.1	58	40	60	23	13	2
12	66941	Mukkiah	3.7	3.6*4.12*3.60	3.5*3.9*3.1	31.8	25	59	25	25	3
13	68139	Vincent selvaraj	2.2	4.21*3.86*4.40	3.9*4.0*4.1	37.39	32	60	19	26	4
14	71656	Jeyaraj	1.8	3.7*4.4*3.3	3.5*4.1*3.0	29.41	25	28	18	20	4
15	71657	Selvaraj	1.2	5.0*3.9*3.9	4.8*3.9*3.7	39.8	31	788	300	30	21
16	72137	Nallakannu	2.6	3.9*4.6*4.0	3.6*4.0*3.5	38.1	32	17		25	3
17	73906	Kadarkariyandi	2.4	4.15*3.38*4.36	3.9*3.3*4.2	31.99	27	600	251	30	18
18	76409	Sethu Arumugam	2.1	3.9*4.3*4.3	3.6*4.1*3.8	38.24	29	38	19	17	4
19	79422	Chokalingam	1.8	3.7*5.3*4.1	3.5*4.0*3.8	43	36	66	21	23	4
20	82453	Natrajan	1.4	3.9*3.8*4.7	3.6*3.5*4.5	36.6	29	32	18	35	6

பழம்புளி

சேங்கோட்டை

முருக்கிலை பொடி

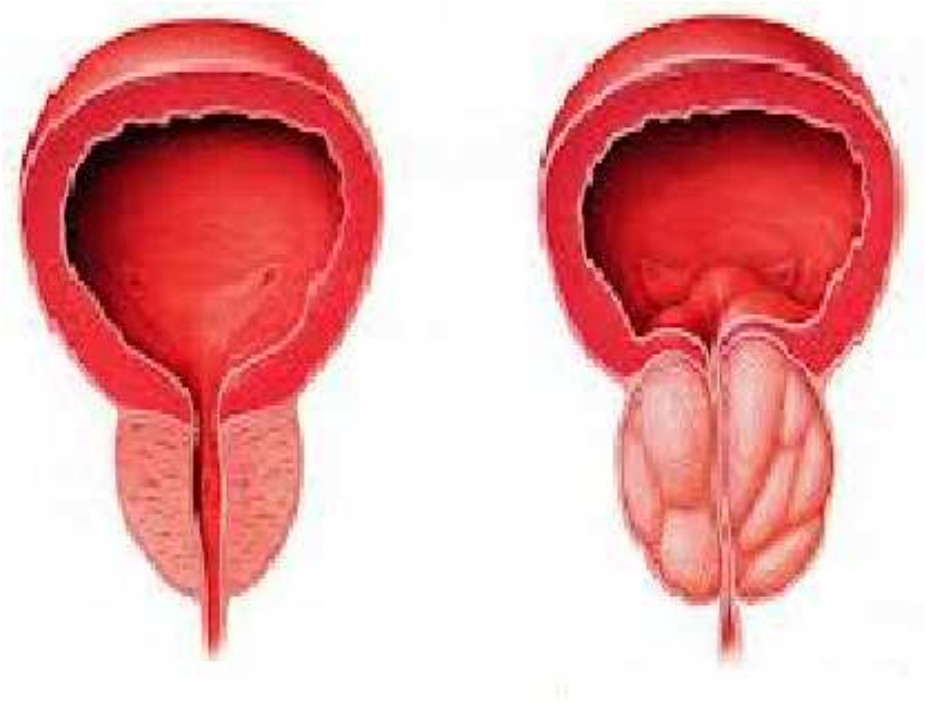
கறியுப்பு

வெடியுப்பு

வெங்காரம்

சிந்து வல்லாதி

BENIGN PROSTATIC HYPERPLASAIA



Normal Prostate Enlarged Prostate

ANTI - MICROBIAL STUDY

Pseudomonas aeruginosa

STREPTOCOCCUS PNEUMONIA

ESCHERICHIA COLI